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The orthopædic surgeon, and his many trained assistants in special departments, may possibly have somewhat overlooked the importance of the cerebral cortex in the technical refinements of operative procedures on peripheral nerves; whereas the scientific neurologist looked first to the cortex in his dealings with those derangements of sensation, dependent upon wounds, which were relegated to his care as a physician.

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Without quoting authorities (and, despite tradition, this will be avoided throughout) we may assert that, as far as the so-called sensory area of the cortex is concerned, the quality of sensation lodged within the grey matter of the post-central gyrus consists in a discriminative appreciation of the spatial relations of a part. As a corollary of this, we may lay it down as a truth that within the so-called motor area of the pre-central gyrus is lodged the voluntary power to initiate an alteration in the position of a part, the spatial relations of which are appreciated in the post-Rolandic area. This power of altering the spatial relations of parts is conferred by the agency of the contractile muscles, and since these muscles react in response to a volition for spatial alteration, we are accustomed to misname them as voluntary muscles. Muscles are the ministers of movement, and some of them take part in voluntary movements, since the spatial relations of the parts upon which they act are appreciated by the cortex; but only to that extent may any muscle properly be termed "voluntary."

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FOUR-FOLD MUSCULAR ACTION.

Most muscles may act in four separate capacities. When a muscle group directly effects the movement of volition, as when the flexor carpi ulnaris contracts in response to a desire to flex the wrist or move the hand in an ulnar direction, it acts as a *prime mover*. When a muscle group acts in direct (but in coördinated and harmonious) opposition to the movement of volition, as when the flexor carpi ulnaris acts in response to a desire to extend the wrist or to move the hand in a radial direction, it acts as an *antagonist*. When a muscle group prevents some undesired, but possible, action of the prime mover—as when the flexor carpi ulnaris contracts as the fingers are voluntarily extended, or when the thumb is voluntarily moved as a whole to the radial side—it acts as a *synergic*. When a muscle group acts in order to steady a part from which a prime mover acts—as when the flexor carpi ulnaris contracts to fix the pisiform when the little finger is abducted—it acts as a *fixation* muscle.

In the teaching of anatomy it is possible that too much prominence has been given to the prime moving action of muscles and their functions as antagonists, synergics and fixation muscles have not been sufficiently emphasised. We have grown accustomed to regard the flexor carpi ulnaris as a muscle which, along with others, possesses the power of flexing the hand at the wrist-joint. But to regard a muscle as a valuable organ solely from the point of view of its prime moving possibilities is to overlook a very large sphere of its utility.

A dental surgeon regards an individual tooth as being far more valuable than merely a single member of a series of 32 units. In the same way the surgeon must learn to look upon muscles as structures that subserve far more activities than that single simple rôle which is allotted as their "action" in the text-books of anatomy. Not much regard could be paid to the sanctity of muscle integrity in emergency war surgery, but the ideals and methods of this type of surgery should not prevail in the ordered routine of a home operating theatre. Were surgeons to realise that the damage or destruction of a muscle not only entails the loss of a particular prime mover, but that it deprives several other groups of muscles of an agent (antagonistic, synergic, or fixation) necessary for the proper performance of their varied actions, he would be at great pains to avoid such routes and methods of operative procedure as inflict extensive muscle damage. Every muscle is an entity which displays the loss of its function when damaged in a series of impaired movements and not only in the loss of a definite individual movement. A nerve is a structure which will undergo natural regeneration in the face of the most adverse circumstances; a damaged muscle is a structure capable of a minimal amount of repair only under the most advantageous circumstances. Yet the surgeon who deprecates anything short of the most delicate operative treatment of a nerve, will often display a ruthless indifference to the vulnerability of muscle.

Now obviously in the whole range of muscular activities there is only one rôle (that of the prime mover) which at all fulfils the conception of a voluntary muscle performing the task set by the will. Of the action of the synergics, the antagonists, and the fixation muscles we ourselves know nothing, and by the exercise of our wills we cannot call forth or alter their activities.

PHYSIOLOGICAL EFFECT OF TRANSPLANTING TENDONS.

In performing the numerous operations of tendon transplantation that have been so successfully done during the war, the surgeon has been carrying out an extremely beautiful physiological experiment. Suppose a lesion of the musculo-spiral nerve to be inoperable (in the sense in which this word is used to-day rather than in the early months of the war) and the insertion of certain flexor muscles be so altered that they become anatomical extensors, and so are put into a position in which they could discharge the functions of a paralysed group—What will be the physiological

possibilities of movement? Will the transplanted muscles assume a new rôle altogether antagonistic to that which was their natural one? And, if they do obey the will as prime movers, will they subserve the other functions normal to a muscle group taking part in a movement of volition?

Many who have performed these operations have imagined that an elaborate preparation by re-education would be necessary before the muscles could take up their new rôle as prime movers. It has commonly been supposed that a flexor muscle would need some special training before it could play the altogether different part of an extensor. There is no doubt that if the technique of the operation falls short of perfection some difficulty is experienced by the patient in bringing the transplanted muscles into play, but some simple mechanical reason for this difficulty is usually apparent. If the technique of the operation leaves the transplanted muscles in a mechanical position for discharging their new function at once, this function will be readily exercised. The flexor muscles have become the mechanical ministers of the movement of extension, and the cortex desiring the realised spatial alteration connoted by extension will use whatever agents are at hand. The only physiological problem which has to be solved in the central nervous system is the dissociation of the transplanted muscles from the action of the undisturbed members of their group. This apparent difficulty is one which as a rule is readily overcome, and the transplanted flexors act as prime-moving extensors without exciting any antagonistic action in the untransplanted flexors. It may indeed be questioned if the after-treatment of cases of tendon transplantation is best carried out by those sufficiently instructed to appreciate the apparent great disturbance that has taken place in neuromuscular physiology. It is at any rate certain that if both patient and attendant are innocent of any desire to probe into abstruse details of the laws of movement extremely good restoration of function may be obtained.

But though a muscle the tendon of which is transplanted may readily perform its new function as a prime mover, it is very different with those other activities in which it normally takes part. As an instance of this we may take the synergic action of the normal wrist extensors. When the fingers are flexed in the action of grasping it is common knowledge that the wrist extensors undergo a contraction. This extensor action is initiated to prevent flexion of the wrist, which would weaken the power of the finger flexors, and as such is an example of synergic activity. As the action of grasping becomes more vigorously performed the synergics contract more powerfully and an active extension of the wrist is produced, for in the position of wrist extension the finger flexors may act to greater advantage by reason of the added tension given to them by the posture. But a wrist flexor turned into a wrist extensor by the transplantation of its tendon does not act in this way. In a case of perfectly successful tendon transplantation, when the patient can extend the wrist and the digits in a perfectly ordered and powerful manner, his transplanted muscles still fail him as synergics. Under these circumstances flexion of the digits is accompanied by flexion of the wrist, and the greater the effort to grasp the more completely flexed does the wrist become. In this way one may say that such cases always look a little better than they really are when considered as functional results, for the grip with a flexed wrist is never a very strong one.

APPLICATION OF RESULTS OF WAR SURGERY TO THE TEACHING OF ANATOMY.

The readiness with which transplanted muscles are used to carry out movements not normally performed by them affords an excellent example of the utter disregard which cortical volition displays for its agents. It may appear strange that, with the experience gained from these cases impressed upon men's minds, this great fundamental truth of muscular movement was not more appreciated when examinations for motor loss were conducted in order to diagnose the severity of lesions of peripheral nerves. Faulty estimates of the exact damage done to nerves by war injuries were nearly always the outcome of the clinician expecting graver and more widespread loss, both of sensation and of movement, than is met with in actual practice. Probably upon the shoulders of the teaching anatomist must fall the blame for this exaggerated expectation. It has been the custom to teach, as the area of supply of a sensory nerve, that total skin field to which its terminals could be traced by dissection. These large fields, though anatomically correct as areas of distribution, are grossly misleading when we are seeking for areas of loss. We must remember the power of neighbouring nerves to make good the loss by overlap, when we examine for sensory changes in peripheral nerve lesions. It has also been the custom to teach that a definite muscle has a definite action, and that it is a voluntary muscle. Not only have all activities but that of the prime mover been neglected in text-book teaching, but even when dealing with this function alone the knowledge gained by dissecting-room methods has not always proved sound when applied to the living subject. Even with a correct knowledge of the normal action of muscles as prime movers, the clinician may be led astray completely when seeking for evidences of loss of movement. We must remember the power of other muscles to make good the loss by acting as agents of a cortical volition. As a result of current methods of anatomical teaching many nerve injuries have been diagnosed as being far more trivial than they actually were, because the motor loss appeared to be so astonishingly slight. It is at times difficult to believe that a nerve—the median, for example—has been completely divided when the very slight loss of movement would appear to indicate no more than trivial damage. Again, the failure to appreciate principles of voluntary movements has frequently led to very false estimates of recovery when the case is presented to the examiner after some previous treatment has been carried out.

EXPLANATION OF FALSE PROGNOSES BY THEORY OF ANOMALOUS NERVE-SUPPLY.

It is by no means impossible that entirely false ideas as to the utility of certain operative procedures may be begotten of the expectation of what may be termed maximum or text-book motor loss. For all observers of peripheral nerve injuries the findings on the operating table proved in time that the actual motor loss in cases of complete division of motor nerves was far less than would be expected. Time after time patients were found who could perform acts which a reliance on text-book teaching led the observer to assert would be impossible were a definite motor nerve to be divided. Time and again the finding of the surgeon was that of a nerve completely severed by the projectile. Now there were various ways of explaining this very disconcerting state of affairs. It was possible that although the nerve in question was completely severed, the muscles which appeared to produce the movement were not supplied by that nerve in the normal way, but obtained their motor fibres from some neighbouring and intact nerve which usually does not supply them. This was an easy explanation, it entailed no more disturbance of ideas than that demanded by the popular mental recreation of considering the orthodox teaching to be very commonly wrong. There have been many wonderful additions to the list of anomalous nerve-supplies made during the war, and it will be well for the writers of our future anatomical text-books if they demand a rather more rigid proof of the anomaly than that which satisfied the clinical observer. No case may be regarded as satisfactory until the most careful electrical tests have been performed before, during, and after the operation. When these tests are carried out it will be found that the number of cases in which an anomalous nerve-supply accounts for an unexpected power of movement is reduced to a minimum. The only instance that has come under my own observation in which an undoubtedly abnormal nerve-supply was proved beyond a doubt was remarkable in that, so far as I know, it has never been described as a dissecting-room anomaly. In this case (Pt. H. C. H., 34,680, E. Surreys, G.S.W. right arm, 21/3/18) the palmaris longus derived its motor nerve from the ulnar.

AN ALTERNATIVE EXPLANATION.

An alternative to appealing to abnormal nerve-supply was the attempt at explaining these cases by revising some of our opinions concerning the normal action of muscles. At the present moment a critical attitude is demanded upon this question, as much confusion may arise both in clinical and strictly anatomical teaching if we do not take into consideration the third possible solution of the problem—the influence of the cortex in the production of voluntary movements. In examining the voluntary movements in a case of nerve injury it must never be forgotten that in asking a

patient to perform some act we are asking him to initiate some realised spatial alteration of a part. All too often the examiner imagines that his directions to the patient amount to a command to exercise a particular muscle. As a consequence of this it has been assumed that the performance of a definite ordered movement is evidence of the activity of the muscle or muscles whose "action" the production of this movement is said to be. For instance, one well-known action of the interossei is that of spreading the fingers apart and closing them together again. If we ask a normal man to do these actions he will employ the normal agents—the interossei—for their performance. But if his interossei be completely paralysed by section of the ulnar nerve, and he desires to do these things, he will employ any agent that can possibly carry out his volition. In this case he may spread his fingers apart with his extensors and draw them together again with his flexors as he opens and shuts his hand. After some practice at this movement the abduction and adduction of the fingers may be performed with a minimum of actual extension or flexion, and then the action of volition is almost exactly like that carried out by the normal individual with the agency of the interossei. If now he be simply asked to spread his fingers apart and draw them together again, the examiner may readily mistake the response for true interosseous action and commit the error of diagnosing absence of injury to, or recovery in, the ulnar nerve.

Purposive Re-education of Muscles.

But, apart altogether from diagnosis of nerve injuries, there is another sphere in which the failure to realise the cortical power for utilising any agent of movement is productive of disaster. Much as been heard of muscle re-education. This art comprises all grades of treatment from the terrible monotony of repetitive mechanical movements, only to be likened to a form of punishment formerly reserved for criminals, to the intelligent coöperation of attendant and patient in the performance of voluntary and purposive efforts. Much good has resulted from this last type of re-education; the patient is encouraged to try, the attendant directs his efforts and arranges conditions so that his attempts may always be made under the most advantageous circumstances. But we must remember that the more we employ the cortex of the patient in the task—and this is the greatest virtue in modern re-education—the more must we be on our guard against stimulating him to employ muscles which are not paralysed to perform the task normal to muscles which are, or have been, thrown out of action, but which with proper surgical treatment may yet recover. It is over this very point that the best type of re-education breaks down. It is easy to train a patient in substituted or trick movements and to take the result as evidence of recovery—when, as a matter of fact, no sort of recovery of the original nerve lesion has taken place.

To the pioneers of modern methods of muscle re-education great credit is due, but they must be prepared to face the fact that many of their disciples are employed in training patients in useless trick movements which serve no other end than to deceive the unwary surgeon and so make him decide not to perform operations which are essential, or lead him to the belief that operative measures already undertaken have achieved an undue success.

Sources of Error in the Diagnosis and Prognosis of Lesions.

The most frequent sources of error in diagnosis of voluntary movements will merely be tabulated, since they will be discussed in detail in the forthcoming issue of the *Journal of Anatomy*.

(*a*) Complete division of the musculo-cutaneous nerve. The elbow is flexed by the supinator longus.

(*b*) Complete division of the musculo-cutaneous and musculo-spiral. The elbow is flexed by the pronator radii teres.

(*c*) Complete division of the musculo-spiral. The wrist may be extended by producing flexion of the metacarpo-phalangeal joints. The two terminal phalanges may be extended by the action of the interossei. The terminal joint of the thumb may be extended by "spring back" from the long extensor tendon, which acts as a ligament when the long flexor is brought into play.

(*d*) Complete division of the ulnar. The fingers may be spread apart and brought together again by the action of the long extensors and flexors. The index finger may be adducted to the middle line by the extensor indicis proprius. The two terminal phalanges may be extended by the long extensors if the metacarpo-phalangeal joints remain slightly flexed.

(*e*) Complete division of the median. Not uncommonly a fair fist may be made involving some flexion of all finger-joints by the pull of the flexor profundus innervated by the ulnar. This is one of the best examples of a cortical volition overcoming obstacles. The metacarpo-phalangeal joints may be flexed by the interossei. The proximal phalangeal joints may be flexed by the flexor profundus after the terminal joints are bent. The terminal joint of the thumb may often be bent, just as in musculo-spiral paralysis it may be extended, by using the paralysed tendon as a ligament. Opposition is often perfectly carried out by the action of the extensor ossis metacarpi pollicis and the ulnar-supplied adductors. The thumb can be "abducted" by the extensor ossis metacarpi pollicis.

(*f*) Complete division of median and ulnar. The wrist may be flexed by the extensor ossis metacarpi pollicis. The fingers may be flexed by producing extension of the wrist.

(*g*) Complete division of the internal popliteal. The foot may at times be depressed by the dissociated action of the peronei.

METHODS OF CHOICE IN IMMUNITY.

ILLUSTRATED BY TWENTY CONSECUTIVE CASES OF STREPTOCOCCAL INFECTION.

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Foreword.

Within the realms of what Dr. Leonard Williams[1] has humorously styled "bug-worship" there is an axiom which I have elsewhere[2] enunciated and which is, consciously or subconsciously, acted upon by all successful workers in therapeutic immunity. This axiom may be concisely detailed as follows: "Against an exotoxin a serum should be employed; against an endotoxin a vaccine." A simple corollary to this at once follows: "Against a combination of both exo- and endo-toxin both a serum and a vaccine should be used." As a matter of practical detail, where a potent endotoxin and a weak exotoxin coexist, a vaccine is generally efficient, and, conversely, a serum may be employed *per se*. It should be remembered that in specific therapy a knowledge of the toxins produced by the germ to be opposed is the best guide to the appropriate remedy. Exotoxins are usually more dangerous to life than endotoxins, and we may compare in these various aspects the exotoxins of tetanus and diphtheria with the endotoxins of the gonococcus and the staphylococci.

Whereas it is a comparatively simple matter to decide on the specific remedy when we have but one toxin to deal with at a time, it becomes a more subtle problem when we are confronted with germs which produce multiple toxins of different kinds. In the case of the dysentery bacilli, the meningococcus and the streptococcus we have to attack and slay germs which form both potent endo- and exo-toxins. The variety of the methods of vaccine therapy commonly used is liable to confound the busy practitioner, and it is to throw light on the comparative values of these methods that this detailed study of a number of cases of streptococcal infection has been made.

Now in dysentery, owing to the difficulty of obtaining vaccines of low toxicity, of which that of Graeme Gibson is probably the best, and in cerebro-spinal fever, where vaccinial antibodies cannot pass through the choroid plexus and so reach the cerebro-spinal fluid, we are driven in practice to rely on serums alone, except, perhaps, when the blood stream is invaded; and so great an authority as Dr. L. S. Dudgeon has recently expressed dissatisfaction with the current dysentery serums.[3] Of these, the Shiga serum is the most successful, and since the Shiga bacillus produces a very potent exotoxin this is what one would expect. Until vaccine treatment is combined with serum therapy in these cases, more especially in the Flexner type, I submit that the full potency of specific treatment cannot be estimated. To my mind it is useless to give a serum only in Flexner dysentery, since the principle toxin is an endotoxin. In cerebro-spinal fever, Sir Almroth Wright's method of

"immunisation in vitro," might be tried with advantage, in the hope of introducing the hitherto neglected endotoxic factor in these diseases.

The axiom I have stated is modified but slightly by the fact that even serums contain a certain amount of anti-endotoxic power, the insignificance of which is proved by the uselessness of typhoid and gonococcal serums.

The Toxins of the Streptococcus.

Sufficient has been said by way of introduction to suggest the value of the study of streptococcal cases in respect of specific treatment; this germ produces potent endo- and exotoxins, including a hæmolytic toxin, well seen in the blood-stained sputa of pneumonic influenza cases, a filtrable exotoxin, and an endotoxin which is more potent than the filtrable streptolysin. Human blood contains a natural antibody for the streptolysin, so that we may expect some value from a serum; none the less, we must not neglect the endotoxic factor.

Streptococcus serum is both bactericidal and antitoxic, as will be illustrated below (Case 13). The rate at which the streptococcus can kill is sometimes phenomenal, as the following case shows:—

A soldier had a partially closed traumatic sinus communicating with the pleura. He was in good enough health to be able to get about freely. The sinus was one day probed by the surgeon for a foreign body revealed by the X rays. In the course of the operation the patient had a slight hæmoptysis, which was not taken very seriously. No anxiety whatever was felt at the time, but the same night the man became very ill, pyrexial, dyspnœic, and livid. The next day I took a blood culture and grew a short-chained streptococcus of the hæmolytic type, and the following day the patient passed into a state of muttering delirium and collapse, from which he never recovered. He died of acute streptococcal septicæmia. I was not asked to treat the case with serum because the case was too fulminating. The streptococci which entered the blood stream in this case must have been both virulent and numerous.

Immunisation Against the Streptococcus.

There are at least five different methods of performing this:—

(*a*) With a serum alone.

(*b*) With a serum, followed after a short interval by a full dose of vaccine.

(*c*) By a serum in the acute stages, followed by a vaccine when the subacute stage has been reached.

(*d*) With vaccine alone.

(*e*) By immunisation in vitro (Sir Almroth Wright's new method).[1]

Method (*e*) was reported to be highly successful, but has not been extensively tried by other workers as yet.

The cases recorded below, which form a consecutive series, are not specially picked so as to ignore failures, and may be classified according to the methods employed: (*a*) Cases 1 to 10 inclusive; (*b*) Cases 12, 13, 17; (*c*) Cases 11, 13, 14, 15; (*d*) Cases 18, 19, 20; (*e*) none.

Methods of choice.—The general principle followed was to avoid a "negative phase"; that is to say, that with the exception of Case 18 vaccines were avoided in the acute stages unless antiserum was also present. Case 18 was very amenable to a simple vaccine, although desperately ill. Had the vaccine not been immediately effective it would have been suspended and a serum substituted. The temperature charts are graphic in most of the cases.

Description of Cases.

Nomenclature: S.C., subcutaneously. I.M., intramuscularly. I.V., intravenously. S.S., antistreptococcic serum. A.V., autogenous vaccine. A.S.V., autovaccine, sensitised. A.T.S., antitetanic serum. Serum (α), an English serum. Serum (β), an American serum.

CASE 1.—Pte. D. (see Chart 1). History: Left foot crushed through explosion of a torpedo; secondary sepsis. Condition: Septic compound fracture left foot. Temperature 104° F.; secondary erysipelas of wound; severe general toxæmia with dyspnœa, running pulse, and muttering delirium at night. Organisms: Streptococcus fæcalis isolated in pure culture from wound.

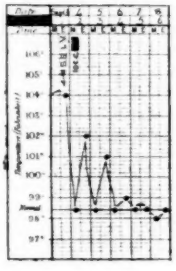
Treatment (specific).—1st day: Antistreptococcal serum (α) 10 c.cm. intravenously. 2nd day: Morning temperature normal; evening temperature 102°. 3rd day: Evening temperature 101°. 4th day: Temperature normal; it remained so. Total amount of serum given, 10 c.cm.

Remarks.—There was no anaphylactic reaction, for the patient had recently had antitetanic serum, and the amount given was not large enough to produce primary anaphylaxis in any ordinary subject. This was a typical case of wound erysipelas, the usual duration of which is ordinarily much longer than in this case. Result: Rapid recovery.

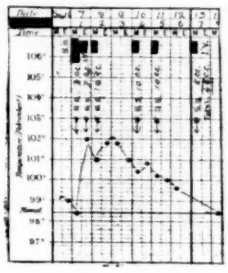
CASE 2.—Pte. L. (see Chart 2). History: A shrapnel wound involving left knee-joint; septic arthritis. Condition: Secondary erysipelas, with general toxæmia; knee very painful. Organisms: Streptococci, staphylococci, *B. pyocyaneus*.

Treatment.—1st day: Pyrexia 102°; erythema spreading up thigh; midday, 3 c.cm. S.S. (α) S.C.; no reaction followed; 6 P.M., 7 c.cm. S.S. I.V.; no reaction. 2nd day:

1



2



Has had a restless night; knee very painful. S.S. 10 c.cm. I.V.; no anaphylactic reaction. 3rd day: No serum given; knee less painful. 4th day: S.S. 10 c.cm. I.V.; improving rapidly, less pain. 5th day: S.S. 10 c.cm. I.V.; knee much less painful and less swollen. 7th day: Knee approximately normal in size, no pyrexia. S.S. 5 c.cm. I.V. Total amount of serum given, 45 c.cm.

Remarks.—Under the recent influence of antitetanic serum, hence no anaphylaxis. Joint cases are notoriously troublesome. This one cleared up rapidly, most likely because it was treated early and vigorously. The presence of other germs does not appear to have been material, so that presumably the streptococcus was the active agent. Result: Recovered rapidly.

CASE 3.—Sgt. W. (not charted). History: Septic wound left leg, which involved the knee-joint later; secondary erysipelas, diarrhœa. Condition: Intermittent pyrexia, furred tongue, septic spots on abdomen, anæmia; patient very ill. Septicæmia and ? dysentery present. Organisms: Blood culture (1st day), *Streptococcus longus;* knee-joint (9th day), fluid grew *S. longus;* stools, *B. dysenteriæ* para-Shiga (pathogenicity not certain).

Treatment.—1st day: S.S. (α) 0·5 c.cm. S.C.; no reaction. 2nd day: S.S. (α) 9·5 c.cm.; evening temperature 99°. 3rd day: Distinct general improvement; P.M. 99°. 4th day: As before, except that the diarrhœa was marked. 5th day: Much improved. 6th day: Temperature normal, improving steadily. 7th day: Knee aspirated. Total amount of serum given 10 c.cm.

Remarks.—Serum discontinued at request of medical officer after 3rd day. Some weeks later a typical streptococcal septicæmia supervened. The serum was not used again. There was no anaphylaxis, as this patient also was under the influence of recent injections of A.T.S. (antitetanic serum). The serum did its work, but was abandoned before the septicæmia was mastered. Result: Failure.

CASE 4.—Pte. P. (not charted). History: Wound involving right knee; septic. Condition: Secondary erysipelas; A.T.S. given six days before treatment started. Organisms: A pure culture of *Streptococcus fæcalis* isolated from the wound a few days before the serum was given.

Treatment.—1st day: S.S. 10 c.cm. (α) I.V., evening; temperature 101·8° F. 2nd day: S.S. 10 c.cm. I.V.; complained of severe headache after both injections. A neurotic subject. Pain disappeared from joint after first injection: A.M. 98·2° F. 3rd day: Knee still swollen. 4th day: S.S. 10 c.cm. I.V.; dressings also soaked with S.S. S.S. 10 c.cm. I.V. repeated three hours later, and was followed by a rigor (T. 102°). 5th day: Evening temperature 101°; constipated. 6th day: Morning temperature normal after enema. 7th day: Examination of pus showed fresh infection—namely, *B. pyocyaneus*, but aspiration of the knee showed streptococci only. Total amount of serum given, 40 c.cm.

Remarks.—The patient subsequently cleared up. The specimen of serum was milky. The reaction was not a true anaphylactic one, but probably due to some proteid toxin. Result: Unsatisfactory as regards the serum.

CASE 5.—Pte. W. (not charted). History: Wounded, age 36. Condition: Septic wound and compound fracture right femur; pyrexia, dyspnœa, and other signs of septicæmia. Organisms: Blood culture, after 48 hours' incubation, yielded a pure culture of a short chained streptococcus.

Treatment.—1st day: S.S. 20 c.cm. (α) I.V.; about an hour after the patient felt shivery and restless; temperature

only 98° F.; he then slept profoundly for several hours, and woke up feeling much better. 2nd day: S.S. 20 c.cm. I.V.; 20 minutes after the injection he collapsed; no pyrexia followed to correspond. 3rd day: Injection omitted; evening pyrexia. 4th day: S.S. 2 c.cm. I.M. (right deltoid); put on calcium lactate gr. 10, t.i.d., for two days. 5th day: S.S. 10 c.cm. per rectum. 6th day: Morning temperature 99·5°; S.S. 1 c.cm. I.V., and after half an hour S.S. 5 c.cm. I.M.; S.S. 5 c.cm. I.V., together with calcium lactate gr. 10; no ill-effects. Six hours later: S.S. 10 c.cm. I.V., and calcium lactate gr. 15. No reaction; temperature 99°. 7th day: S.S. 20 c.cm. I.V., with calc. lact. per oram; reaction with temporary coma; recovered. 8th day: 3 A.M. comatose and hemiplegic. 11 A.M. comatose, and died with signs of intracranial pressure. Total amount of serum given: 93 c.cm.

Remarks.—This was not a case of anaphylactic death, since there was no urticaria or any other sign of serum sickness; it may have been a case of plethoric hemiplegia or, more probably, a case of an abscess bursting within the skull. The only other suggestion was that it was due to a toxic serum like the last case. A post-mortem was not allowed. Syphilis must not be forgotten. Result: Failure.

CASE 6.—Sergt. P. (see Chart 3). History: Gunshot wound left leg; compound fracture of femur. A.T.S. some months ago. Condition: No union; septic; secondary erysipelas with pyrexia and severe toxæmia. Organisms: Streptococci grown from bullæ.

Treatment.—1st day: 0·5 c.cm. S.S. (β) I.M. Acute anaphylaxis with collapse an hour later; recovered under pituitrin and oxygen. 2nd day: Generalised urticaria; right arm tensely swollen. It was suggested to the writer that thrombosis had occurred. Following the teaching that after one attack of anaphylaxis one can safely proceed without fear of another, S.S. 1·0 c.cm. S.C. was given at 11.20 A.M., and 5·0 c.cm. I.M. 30 minutes later. One hour later acute anaphylaxis occurred with collapse, cyanosis, and vomiting. The patient became pulseless. Pituitrin 1 c.cm. was given. Three hours later the right pulse was not palpable and the left rapid and feeble. Pituitrin and calcium lactate were given; gradual recovery ensued. 3rd day: Arm less swollen; urticaria of arms and body; pulse much improved; temperature normal. 4th day: Normal temperature; subsequent recovery. Total amount of serum given 6·5 c.cm.

Remarks.—The risk of anaphylaxis was known, but the second attack was unexpected. A longer interval before giving the second dose on the 2nd day might have been made. The case recovered from the second anaphylactic attack. Anaphylaxis may, of course, be one of the "reactions of immunity," comparable to agglutination. Result: Recovery.

CASE 7.—Orderly B. (see Chart 4). History: Pneumonic influenza. Inoculated Oct. 28th, 1918, with first dose of prophylactic vaccine; warded four days later with pneumonia. Blood count Nov. 19th, 1918; white cells 20,400 per c.mm.; no eosinophiles; and 76 per cent. of polynuclear neutrophiles, many of which were embryonic. Condition good, consolidation more lobar than lobular. Organisms—sputum: *Streptococcus hæmolyticus*, pneumococcus; no tubercle bacilli found. Empyema pus (subsequently): A pure culture of *Streptococcus hæmolyticus*.

Treatment.—1st day: S.S. (β) 1 c.cm. I.M. (buttock); no anaphylaxis. Never had serum. 2nd day: S.S. 20 c.cm. I.M. 3rd day: Swinging temperature, felt much fitter. 4th day: Still slight evening rise of temperature. 9th day: S.S. 10 c.cm. I.M.; unresolved pneumonia; no reaction. Total quantity of serum given, 31 c cm.

Remarks.—Subsequently a localised empyema was opened and the patient then made a rapid recovery and returned to duty. This localisation was, no doubt, aided by the serum (see Chart 4). Result: Localisation of empyema and rapid recovery after resection of rib.

CASE 8.—Major P. (see Chart 5). History: Gunshot wound left leg; amputation at thigh; had A.T.S. within the last month. Condition: Secondary erysipelas of wound, spreading erythema up and down leg; general condition so bad that it was thought to be a case of septicæmia. Organisms: Blood culture, negative; wound, a pure culture of *Streptococcus fæcalis*.

Treatment.—1st day: S.S. (β) 2 c.cm. I.M. (left deltoid), no reaction. 2nd day: 8 c.cm.; breathing easier; more himself mentally; previously he had been inclined to delirium. 3rd, 4th, and 5th days: gradually recovered. Total amount of serum given 10 c.cm.

Remarks.—The delayed effect on the temperature should be noted and compared with Case 13. No anaphylaxis. Result: Recovery without retrogression.

CASE 9.—Capt. H., aged 56 (see Chart 6) (Military Hospital, Eastbourne, under Dr. Henry L. Ewens, who was good enough to ask my advice about this case. He followed my suggestions, which were aided to no small extent by his own skill). Following are Dr. Ewens's notes:—History: Patient admitted from local camp; total abstainer; has been ill some days; not had A.T.S. Condition: cyanosed; had the toxic appearance of a moribund influenzal pneumonia; well-marked consolidation at one base; for pyrexia see Chart 6.

Treatment.—1st day: S.S. (β) 0·5 c.cm. S.C. 2nd day: S.S. 10 c.cm. I.M. Temperature 103·6°. 3rd day: Morning temperature 97·4°; less cyanosed; soft pulse: obviously better. 13th day: Lung practically clear; mitral bruit present; said not to have existed before. 30th day: Resolution complete. Total amount of serum given 10·5 c.cm.

Remarks.—Immediate success. Personally I do not think this was an ordinary pneumonic crisis. Result: Recovery.

CASE 10.—Sergt. D. (see Chart 7). History: Acute onset of facial erysipelas. Condition: Severe toxæmia and much swelling. Organisms: *Streptococcus erysipelatis* recovered from a bleb.

Treatment.—1st day: S.S. 1 c.cm. (α) I.M. morning; no reaction. S.S. 9 c.cm. I.M., evening; no reaction. 2nd day: S.S. 20 c.cm. I.M. 3rd day: 20 c.cm. I.M.; facial swelling much diminished. 4th day: Recovery proceeding rapidly. Total amount of serum given, 50 c.cm.

Remarks.—Vigorous treatment yielded an immediate result. Result: Recovery.

CASE 11.—Lieut. W. (not charted). History: Multiple septic wounds, thigh and leg; toxæmic and wasted. Condition: Wounds pouring out pus; average evening pyrexia 101°; much pain; morphia required daily for this. Organisms: *Streptococcus fæcalis* and *Staphylococcus aureus*.

Treatment.—1st day: Autogenous vaccine (A.V.) 0·25 c.cm., containing streptococcus 12 million, staphylococcus 125 million; no reaction. 6th day: A.V. 0·5 c.cm.: no reaction. 11th day: Patient developed septic arthritis of knee. General condition worse. 12th, 13th, and 14th days: S.S. (α) 20 c.cm. daily, so as to avoid a negative phase. Given per rectum on one occasion. 15th day: Leg amputated; general condition grave; extreme prostration, physical and mental; wasting marked. About three weeks later 0·5 c.cm. of the vaccine was given with benefit. A month after this there was still much discharge, but steady improvement had set in, and he eventually healed up completely about four months later. Amount of serum given: 60 c.cm. Amount of vaccine given: 15 8 c.cm.

Remarks.—Life was saved by the amputation, but the vaccine probably prevented a post-operative "flare." The case was undoubtedly helped by specific therapy. He had a large residual septic wound after the operation. It was a long case. Result: Complete recovery and healing.

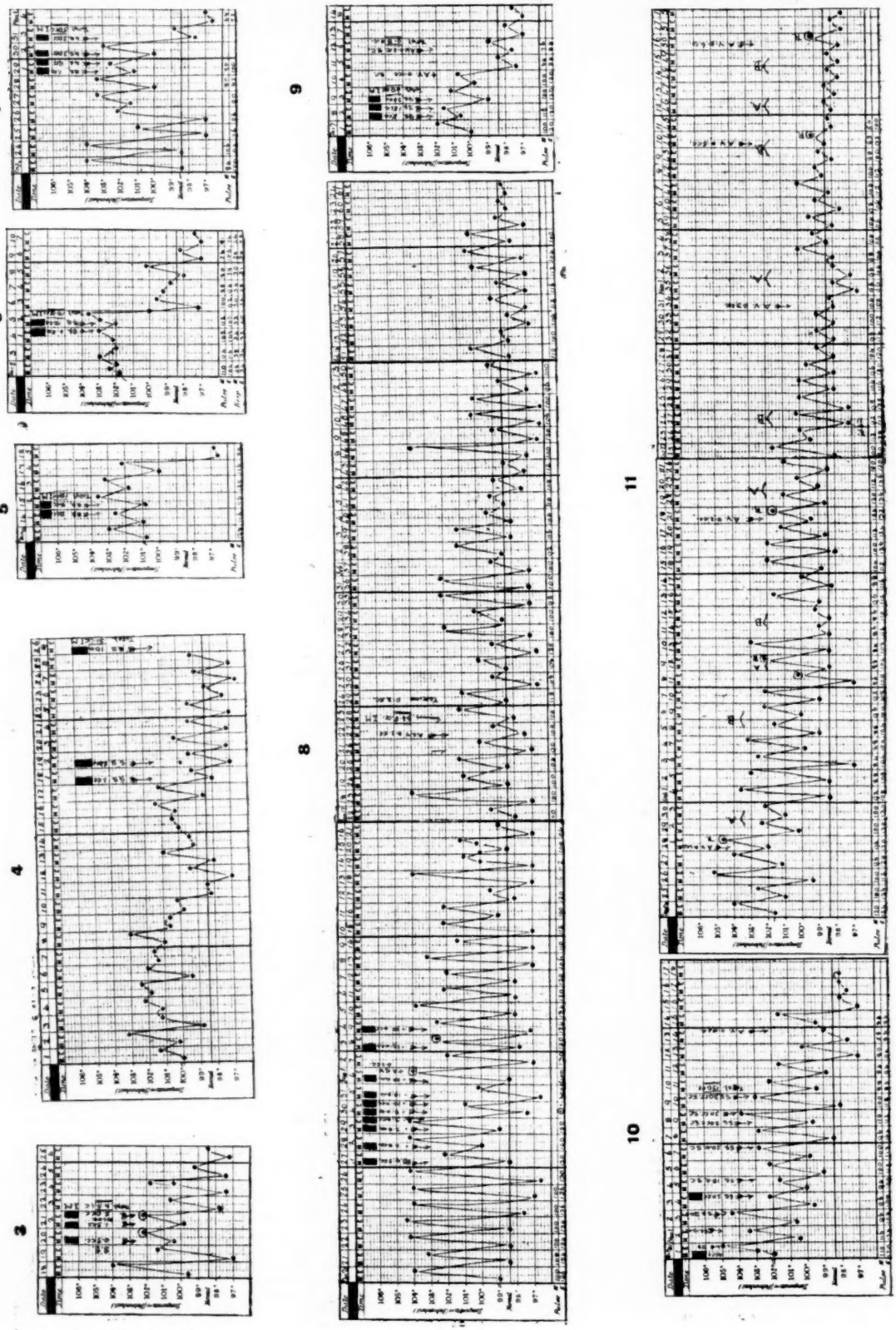
CASE 14.—Pte. C. (not charted). History: Septic wound, knee; toxæmic; constipated. Condition: Pyrexia, 102·8° at night; very ill; much pain from knee; very wasted. Organisms from wound: Streptococcus; *Staphylococcus aureus*.

Treatment.—1st day: S.S. 10 c.cm. (α); after half-an-hour, A.V. 0·3 c.cm. Streptococci 60 million; staphylococci 600 million. Evening temperature normal. 2nd day: Morning and evening temperature normal; pulse not so good; septic diarrhœa. 3rd day: S.S. 10 c.cm. half-hour interval, then A.V. 0·4 c.cm.; no appreciable effect. 6th day: S.S. 10 c.cm. and A.V. 0·6 c.cm.; a reaction at night. The serum was then dropped and subsequent injections of vaccine were given. One month later there was a nocturnal pyrexia of 99° only, and one month after this the patient had obviously put on much flesh, and his temperature was normal. Amount of serum given 30 c.cm. Amount of vaccine 7·3 c.cm.

Remarks.—The vaccine was employed successfully in large doses from the first, owing to the "protective" power of the serum. Anaphylaxis was absent since the patient was under the recent influence of A.T.S. Result: Recovery.

CASE 13.—Lieut. M. (see Chart 8). Patient had a wound of the chest followed by empyema, but the surgeon was of opinion that the wound had nothing to do with the empyema, and the bacteriology of the blood seems to be also in favour of this view. It was more likely an influenzal syndrome. He had had A.T.S. nine months previously. Condition: Septicæmia following empyema; hæmoptysis occurred, he was wasted, and had bedsores; also delirious, and had a deep hectic flush; the pulse was thready. The patient appeared moribund when I first saw him. Organisms: Previously from empyema, *Streptococcus hæmolyticus*; from sputum, *St. hæmolyticus*, pneumococcus, *B. influenzæ*, *Micrococcus tetragenes*, *B. septus*, no tubercle bacilli; from blood culture, after 48 hours' growth, *Streptococcus hæmolyticus*.

Treatment.—1st day: S.S. (β) 0·5 c.cm. I.M., no reaction. 2nd day: S.S. 1·0 c.cm. I.M. 3rd day: 2 0 c.cm. morning, 3 0 c.cm. evening S.S., I.M. 4th day: 8·0 c.cm. morning and 10·0 c.cm. evening. 5th day: 10·0 c.cm. morning. 6th day: S.S. 10 c cm. I.M. and 0·1 c.cm. A.S.V. (streptococci, 10 million); a slight rigor occurred; profuse sweating; pulse stronger. This was an anaphylactic reaction. 7th day: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Much better; œdema of lips (serum sickness). 8th day: S.S. 10 c.cm. I.M.; anaphylactic rigor one hour after the injection. 9th day: S.S. 10 c.cm. I.M.; no apparent reaction, later temperature 103°. It was felt that in such a desperate case the risk of anaphylaxis was purely secondary, although the attacks gave rise to anxiety. 10th day: Serum discontinued by request; the patient was to be allowed to "die in peace." 26th day: A.S.V. 0·1 c.cm.; blood culture sterile after three days' incubation. Recovery without retrogression.

Remarks.—This case is a remarkable one. Here, again, we see anaphylaxis followed by recovery, which in this case was gradual (see Chart 8). It was one of the two only cases of verified septicæmia, which recovered at this hospital during its 4½ years of existence, so far as I know. The other was also cured with the same serum. The phenomenon of "storage of antibodies" is well illustrated by this case, for the last dose of serum was given on the 9th day and the case was not apyrexial until the 55th. The serum is much more slowly excreted intramuscularly than when given into a vein. In the light of the above, the question arises whether anaphylaxis may not be "a reaction of immunity" comparable to agglutination. Total amount of serum given: 65 c.cm.; vaccine, 0·2 c.cm. Result: Uninterrupted recovery.

CASE 14.—Miss W. (V.A.D.) (see Chart 9). History: Pyodermia of scalp and fingers, followed by acute tonsilitis. Condition: As above; pyrexia 102° F.; throat œdematous; swallowing difficult. Previously, 0·05 c.cm. of A.V. had been given for the skin condition (5 million streptococci). Organisms: Both skin and throat grew streptococci; the general toxæmia justified a blood culture, which was negative; no diphtheria bacilli isolated from the throat.

Treatment.—(A.V. 0·5 c.cm. S.C. not charted, Nov. 29th, 1918). Dec. 8th, 1918, 1st day: S.S. (β) 5 c.cm. I.M., midday; S.S. 15 c.cm. I.M., 6.30 P.M. 2nd day: S.S. 20 c.cm. I.M. A.V. 0·1 c.cm. S.C. (10 million streptococci). Has white patch on right tonsil which is disappearing. 3rd day: Patch on tonsil smaller. 4th day: Temperature normal; patch on tonsil thin and has a well-marked healing edge; patient speaks and feels better. 5th day: A.V. 0·2 c.cm. Total amounts given: Serum, 40 c.cm.; vaccine, in all, 0·8 c.cm. Subsequently a few more doses were given to complete the case of the pyodermia.

Remarks.—No anaphylaxis. The patient never had serum before. The combination of vaccine and serum was eminently successful.

CASE 15.—Pte. D. (see Chart 10). History: Gunshot (shrapnel) wound involving neck and jaw on right side. Condition: A wound about 2 in. long occupied superficially by toughly adherent slough; very severe secondary erysipelas; right eye closed; much œdema; features unrecognisable; whole face and neck involved; severe toxæmia. Organisms: Blood culture negative; bleb of face yielded a streptococcus.

Treatment.—1st day: S.S. (β) 10 c.cm. I.M. (buttock). 2nd day: S.S. 10 c.cm. I.M.; facial swelling severe. 3rd day: S.S. 20 c.cm. I.M.; can open eyes, swelling not so severe. 4th day: S.S. 20 c.cm. I.M.; swelling diminishing. 5th day: S.S. 20 c.cm. I.M.; improving slowly. 6th day: Desquamation; left ear freshly involved. 7th day: Left ear swollen: S.S. 20 c.cm. I.M. 9th day: S.S. 20 c.cm. I.M. (morning); right side of face and eye swollen up again; 20 c.cm. S.S. evening. 10th day: Œdema of neck and back; medical officer in charge of case not hopeful of recovery; smear from wound showed about 75 per cent. of germs to be phagocyted; S.S. 20 c.cm. 10th day: In statu quo ante. 11th day: Great improvement; features recognisable. 12th day: All œdema of face and neck gone; wound sloughy but looking healthier. 14th day: A.V. 0·05 c.cm. (streptococci 100 million); slight pyrexia; flatulence. Two more doses of vaccine completed the treatment, given at an interval of ten days.

Remarks.—A modified Carrel count proved prophetic; "storage of antibodies" was illustrated in this case. There was no anaphylactic reaction. The value of persistence is obvious; "protection" by previous doses of serum permitted a large dose of vaccine to be given safely. Result: Complete recovery.

CASE 16.—Pte. G. (not charted). History: G.S.W. left leg; amputation; sepsis. Condition: Pyrexia; septicæmia; pyæmia; clinically mild. Organisms: Wound; streptococcus, *B. pyocyaneus*, staphylococcus. Blood: Streptococcus (the day before treatment); pyæmic abscess; streptococci only.

Treatment.—1st day: S.S. (β) 10 c.cm. I.M. 2nd day: S.S. 10 c.cm. I.M.; serum sickness; urticaria. 3rd day: S.S. 1·0 c.cm. I.V.; immediate urticarial anaphylaxis, with collapse. 4th day: Temperature normal in morning, evening 99°. 5th day: General condition much improved. 11th day: Blood culture still positive. 12th: A vaccine was tried in view of previous serum sickness; the patient was much improved in health, however, already. 22nd day: A.V. 0·1 c.cm. (250 million streptococci); temperature immediately fell to normal; re-amputation was performed successfully. Blood culture negative. 32nd day: A.V. 0·2 c.cm. apyrexial. Totals: Serum, 21 c.cm.; vaccine, 0·3 c.cm.

Remarks.—Here, again, a second attack of anaphylaxis followed the first. The administration of A.T.S. to all wounded soldiers will necessitate great caution in the employment of serums in the future in these cases. This was the second case of verified septicæmia cured with serum (β). Result: Complete recovery.

CASE 17.—Lieut. P. (not charted). History: G.S.W. os calcis (left); septic, profuse discharge. Condition: Severe toxæmia; pyrexia 101·2° F. Organisms: Streptococci; *B. coli* (non-saccharose fermenter); staphylococci (wound).

Treatment.—1st day: S.S. (β) 10 c.cm. I.V., and after half an hour A.V. 0·3 c.cm. I.C. (streptococci 60 million). 2nd day: Morning temperature normal for first time since admission. 5th day: S.S. 10 c.cm. I.M.; A.V. 0·6 c.cm. I.M. 6th day: Distinct improvement; evening temperature 99°. 7th day: Serum sickness, urticarial-arthritic type, mild. 8th day: Temperature 101° after surgical manipulation. 10th day: A.V. 0·7 c.cm. I.M.; no reaction. 11th day: Foot amputated; temperature at once fell to normal: the wound rapidly cleaned and healed; one more injection of vaccine was given on the 23rd day.

Remarks.—Mild anaphylaxis: no post-operative flare; the case was complicated by the presence of *B. coli*, but did react favourably at first to the treatment. Result: Partial success only; eventually recovered.

CASE 18.—Pte. L. (see Chart 11). History: A bullet wound involving left hip-joint; abscess cavity 5 in. by 5 in., and 5 in. deep. Condition: Two sinuses connected with hip-joint, 5 in. deep; X ray report. Left ischium fractured, possible abscess of left ilium; left hip-joint abnormal?; tuberculosis because of obscured head of femur. Patient very weak; pus welled up from wound; wasting; anæmia; pyrexia; much pain; age 18 5 years. Organisms: *Streptococcus fæcalis* and staphylococci in pus; no tubercle bacilli found.

Treatment.—1st day: A.V. 0·1 c.cm.; rigor that night (20 million streptococci). 11th day: 0·1 c.cm.; temperature immediately fell to normal. After each improvement there was a "primary" period of diminished pyrexia ("A" on chart) and then pyrexia, and then a secondary improvement (B), the significance of which may assist in determining when to place the different doses. 21st day: A.V. 0·2 c.cm. S.C.; slight reaction. 31st day: Temperature normal; A.V. 0·3 c.cm. S.C.; marked general improvement almost from the first. 41st day: A.V. 0·5 c.cm.; sinuses closing rapidly. 51st day: A.V. 0 6 c.cm.; wound healed all but for a piece one-third of an inch in diameter. 61st day: Healed completely. Total 1·7 c.cm.

Remarks.—The vaccine alone achieved a remarkable result. It is possible that if a serum had also been used the healing would have been expedited. It must be remembered that where pus is present the endotoxic factor is very prominent. Result: Slow, but a complete success.

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Pte. A.: Right thigh. (X ray by Miss Dell, radiographer, B.R.C.H., Netley.)

CASE 19.—Pte. A. History: Shrapnel wound right leg; compound fracture of femur. Condition: Mal-union; profuse and very chronic suppuration for months; vaccine requested (before X ray taken). Organisms: Streptococcus and staphylococcus. (See Fig. 12.)

Treatment.—Several doses of vaccine were given without any benefit. When the X ray was seen it became obvious that vaccines were useless until sequestra and foreign bodies were eliminated.

Remarks.—Foreign bodies and sequestra entirely annul the beneficial effects of vaccines. Result: Failure due to an error of judgment. I have elsewhere referred to the great value of the X rays in helping one to decide when not to use vaccines in septic wounds.[1]

CASE 20.—Cpl. S. (not charted). History: Wounded April 5th, 1917. Admitted April 9th, 1917. Compound fracture left foot with sinus; septic; had two operations for sequestrotomy. Condition: Persistent septic sinus. Organisms: Streptococcus, staphylococcus.

Treatment.—1st day (two months after admission): A.V. 0·2 c.cm. S.C. (20 million streptococci). 11th day: 0·3 c.cm., and so on up to 1·0 c.cm. The sinus healed on the 41st day and remained so. Total 5·4 c.cm.

Remarks.—There was no surgical interference during the treatment; a vaccine was quite sufficient. There was little or no general toxæmia, so it may be that the endotoxic factor was alone predominant. It will be remembered that diphtheritic wounds do not show appreciable general toxæmia as a rule.

Summary.

It is of interest to note that out of these 20 cases, nearly all acute, there were, despite anaphylaxis, 14 unequivocal successes, including two cases of well-developed septicæmia. Of the other 6 (partial or unsuccessful) cases:—Case 3 died from streptococcal septicæmia some weeks after the serum had been stopped by the medical officer in charge of the case. Case 4 died from intracranial pressure due to hæmorrhage or to the bursting of a pyæmic abscess. Case 5: In this case the serum was stopped because of severe reactions, but his wound healed after aspiration of the knee-joint. Case 7 derived temporary benefit, and made an uninterrupted recovery after resection of a rib. Case 17 only healed after amputation. Case 19 illustrated the folly of using a vaccine for shrapnel.

Notes on the Commercial Serums Used.

Serum (α) is an English serum; serum (β) a serum made from American strains.

	Cases.	Successful.	Unsuccessful.
Serum (α)	8	4	4
Serum (β)	9	8	1 (partial success, No. 7).

Serum (β) was stored in coloured phials, (α) in clear phials, both are highly polyvalent; (α) was sometimes milky, (β) never. The makers of serum (β) were exceedingly kind in supplying me with details of its composition, for which I thank them. Only want of space prevents my giving these in full. On a priori grounds I should have expected the better result from serum (α), since it is made from English strains. Whether the superiority of the former is due to better preparation or to better conservation, I leave for others to judge, but although I hold no brief for the makers I consider serum (β) to constitute the only valuable remedy extant for streptococcal septicæmia and for pneumonic influenza of the confluent type.

Conclusions.

That one attack of anaphylaxis protects against a second has been shown to be a dangerous fallacy. That the use of antistreptococcal serum has been found to be so unsatisfactory as to warrant its abandonment is likewise incorrect. Used with care the serum is of great value, provided a potent strain be employed, but to get the best results Method B should be followed. The exotoxic factor may perhaps be ignored where the germ is parasitic rather than toxæmic, but in the latter cases it is dangerous to ignore this factor. Method E has yet to win its spurs, but is quite rational. Method A (serum alone) is the method of choice in very toxic cases. One must always be prepared for anaphylaxis in cases which have had serum unless within ten days of the injection. A small dose, followed by an interval of several hours for developments, should be tried. Finally, I would request those who are still sceptical as to the value of vaccines in wound infections to study Fig. 11.

I beg leave here to express my thanks to the Commandant of the British Red Cross Hospital, Netley, for permission to publish these records, and to my late colleagues, especially Major H. S. Souttar, C.B.E., and Captain R. H. Campbell, for their coöperation and for the latitude which was so liberally accorded to my activities in respect of those cases in which our work coincided, and lastly to Miss G. C. F. Porter for so kindly copying the charts.

References.—1. Leonard Williams: Practitioner, London, 1915. 2. A. Geoffrey Sharp: Vaccines and Sera, London, 1918, p. 100. 3. L. Dudgeon: Address on Bacillary Dysentery, B.M.A., London, 1919. 4. Sir A. E. Wright: Lecture, THE LANCET, March 29th, 1919.

A STUDY OF
EPILEPTIFORM CONVULSIONS.

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IN studying the statistical records of men invalided from the services for various causes, one cannot but be struck by the number of cases which are diagnosed as epilepsy. In statistics prepared during the summer of 1918, 4257 had been discharged for this disability up to August 31st of that year.

This number is large, and it makes one pause to consider what exactly is meant by the term epilepsy. Ordinarily speaking it implies the occurrence of fits, which are supposed to be due to some undetermined physical change in the brain. This is sometimes referred to as organic epilepsy and is distinguished from other forms of convulsion by various signs which will be referred to below. Are the numerous "epileptics" met with amongst soldiers and pensioners all of this "organic" type or not? If a group of individuals of the same age and general health were examined in civil life, without a doubt a certain number of "epileptics" would be met with, but the proportion would not be anything like so high. Therefore we must conclude that in the group of cases under consideration we have to deal with other conditions than this so-called organic epilepsy.

The Army authorities recognise the difficulty of being certain of the diagnosis, for it is laid down that a case of epilepsy must not be dealt with as such unless a medical officer has seen the patient in a seizure and certified that it is a true epileptic fit. Even so it is obvious that mistakes are made, and it becomes important to make a thorough study of the so-called functional fits which are very liable to be mistaken for true epilepsy.

The Origin of the Hysterical Fit.

Functional fits are genuine symptoms of hysteria, and fall under Babinski's definition of this condition—namely, that they are produced by suggestion and curable by psychotherapy. The onset of the fit is generally found to depend on an emotional crisis. As is the case with neurotic symptoms generally, such a fit is the result of the displacement of the energy which ought to be used in completing the action called for by the stimulus of an instinctive process. To explain this more fully it is necessary to outline the conception of the nature of instinctive processes as expounded by McDougall. We have born within us certain instincts which we possess in common with the animals; one of these is the instinct of flight, another that of pugnacity, and so on. Such instincts present for examination three phases—the recognition of the stimulus, the feeling of the emotion called forth by the stimulus, and the action which results from the existence of the first two. An instinctive process once set in motion tends to go through these three phases and culminates by letting loose energy which is normally transformed into the activity of the third phase. For example, in the instinct of flight the stimulus may be the appearance of an enemy stronger than the subject or of some destructive force; this calls out the emotion of fear and normally results in flight or concealment. In the case of pugnacity the stimulus may be an injury or an insult calling up the emotion of anger and normally resulting in violent action of some sort against the object. Under certain circumstances, however, something may prevent this normal activity from taking place, and in such cases the energy which is associated with the whole process finds its outlet in some physical "expression of the emotion" which is always profitless, being directed to no definite purpose. Such expressions are the sweating and shaking of fear and anger; and in some cases the accumulation of unliberated energy may become so excessive that, being uncontrolled, it no longer results in purposive activity but in the general motor explosion of an epileptic fit. The symptoms determined by this misdirected energy will depend on suggestions acting on the individual at the time; such suggestions may come from his own consciousness (auto-suggestion) or from his environment (hetero-suggestion). It is not by any means easy to discover in every case the psychological process by which the suggestion was accepted, but the following examples give an idea of how they may arise.

Driver J., while on duty in France, was thrown from his horse and struck his head. He was unconscious for a time and was told that he had had a fit. He recovered his full consciousness quickly, but a severe headache persisted for some time. Six months later, while grooming his horses, he had a severe headache. He was much fatigued and under considerable emotional strain at the time, and the headache was followed by a fit. Subsequently he had frequent fits, but these only occurred when he had a severe headache. In this case the idea of headaches had become associated with that of fits, and whenever he had a severe headache a fit was suggested and took place.

Pte. M., a microcephalic of low intelligence, was a very "frightened" boy and an obvious martial misfit. Whenever anyone came into the room at all noisily he had a fit. This proved to depend on a childish memory of his father, who used to cause him great alarm by coming into the house drunk and knocking things about. On such occasions he would frequently have a fit. When he was made to realise the connexion between his present fits and those of his childhood they ceased entirely.

Dr. A. F. Hurst quotes a case of a soldier servant who had seen his officer killed, and was himself blown up with the same shell. The officer before he died had some convulsive movements, and the servant thereupon had a fit, and this fit was subsequently repeated on several occasions.

Such, then, is the origin of the hysterical fit. The nature of these will be determined by what the patient thinks the fit ought to be like. The man who knows nothing about epilepsy will simply throw himself down and wave his limbs about in a more or less violent manner. These movements may become extremely violent and require considerable force to restrain them. Although the action is not within the control of the active consciousness, it is guided by the subliminal consciousness, with the result that the patient always has his fit on the grass or on the bed, where he is unlikely to hurt himself. I once saw a large crowd of neurotic patients assembled on a gravel square surrounded by grass plots. A statement was read out to them which caused them considerable emotional excitement. About five or six had fits, and not one of these fell on to the gravel; without exception they managed to reach the grass before they collapsed.

However, in the case of patients who are familiar with what a true epileptic fit really is, by reason of their having suffered from one in their own persons, or having closely observed others affected with this malady, the diagnosis may be much more difficult. In such cases the movements may exactly simulate the so-called organic epilepsy, and well-known diagnostic signs of true epilepsy will cease to hold good. Such patients know that the tongue is bitten in epilepsy, and they will bite their tongues and lips sufficiently to cause bleeding, but the injury is never extensive, and the deep scars sometimes seen in true epileptics are never encountered in cases suffering from hysterical fits. Similarly, these cases know that the urine is passed in the course of an epileptic fit, and this they will do in a hysterical fit. Rarely epileptics relax the anal sphincter; this never happens in hysterical cases.

The patients referred to as having had epilepsy themselves will include two groups. Firstly, those who have had true epilepsy in childhood or in early life, but in whom the trouble had apparently ceased until the occurrence of an emotional crisis, when the fits reappeared. These latter fits will in all probability prove to be hysterical, and therefore curable. Secondly, one cannot study a series of true epilepsy in soldiers without being struck by the frequency with which the condition is complicated by the occurrence of hysterical fits. Presuming that it is right to say that an hysterical fit is produced by suggestion, what can be more suggestive than an organic fit? This will be especially the case if the fit follows an aura. For example, if the aura is a tingling of the fingers, whenever the fingers tingle, from whatever cause, a fit will be suggested, and if the patient is suggestible at the time he will have one. The following cases exemplify these conditions.

Pte. R. had fits when he was a baby, which continued until he was 8 years old and then ceased. At the age of 21, when out in Egypt, the fits returned and persisted for 18 months. He had no more until called up for army service at the age of 42. He was then much disturbed over business matters and found the training very hard. He developed fits, which were clearly hysterical and which were cured by psycho-therapy. In this case the infantile fits were almost certainly true epilepsy, the nature of those at the age of 21 were doubtful, but those at the age of 42 were clearly hysterical.

Pte. J. had had fits all his life, some of which were clearly true epilepsy, and one observed while he was in hospital was definitely so. After a bad time in France his fits became much more frequent and he had two or three a week. The majority of these were hysterical, and as a result of psychotherapy he went a period of two months without a fit, which was a longer interval free from convulsions than he had enjoyed in civil life.

Pte. H. was wounded by a shell on August 1st, 1918, in the back thigh and scalp. There was no fracture of the skull and all wounds were healed five weeks later, while ten weeks after the wound no scar could be found in the scalp. It was clear, however, that he had been concussed at the time of the wound and had had a short period of unconsciousness. Since the wound he had had a series of fits at intervals varying from two days to two weeks. He confessed complete ignorance of these fits, and stated that he had been brought in on more than one occasion by some passer-by, who had discovered him lying unconscious in the road. He said he knew nothing of how the fit began or what happened, except what was told him. Such a history points to the fit being organic in nature. However, he did not relax his sphincters, nor did he bite his tongue or experience any aura, while on one occasion he was apparently very violent, six men being required to hold him down. These facts point rather to a fit of a hysterical nature, and it is probable that he was one of the mixed cases described above. He was treated by psychotherapy and at the same time given bromide, and was discharged from hospital, having been seven weeks without a fit, more than three times the length of his previous record.

Diagnosis.

When hysterical fits closely simulate so-called organic epilepsy there are only three signs which will establish a diagnosis with certainty. The most important is the presence of a positive Babinski's sign after the termination of the fit. If this is definitely found, then the fit is certainly of the organic type, but unfortunately this sign is not always found in this variety, and at best its presence is fleeting, disappearing almost immediately after the return of consciousness. To be of diagnostic value the sign must be quite definite. Another sign is the presence of well-marked cyanosis. Hysterical patients as a rule are flushed during a fit, but inasmuch as cyanosis is due to the temporary throwing out of action of the muscles of respiration, and since these muscles are voluntarily controlled, it is possible for the hysteric to do this. I have, as a matter of fact, seen one case of fits which were undoubtedly hysterical in which the patient did become cyanosed. Finally, Collier and Buzzard lay stress on conjugate deviation of the eyes in organic epilepsy; this does not occur in hysterical fits. For the rest we must be guided by other signs, which, though not pathognomonic, yet, taken together, will form valuable corroborative evidence.

The history of the onset is often valuable, definite association with emotional crises or strong suggestive influences being in favour of hysteria. The frequency of the fits and the conditions under which they occur are important. Very great frequency suggests that some, at least, of the fits are hysterical. Occurrence in connexion with emotional crises, or with some particular symptom with which they were associated in the first instance, is in favour of hysteria. It has been stated that fits occurring at night are not likely to be hysterical, but this is by no means always true, as I have seen cases in which hysterical fits occurred at night, the emotional stimulus being afforded by a dream.

In true epilepsy the patient is not violent and does not require to be held down by force, but often in hysteria the movements are very violent, and the patient will relate that several men were required to restrain him. In spite of all this apparent violence the patient seldom hurts himself, and the hysteric does not present the scars and bruises of the true epileptic. Even if the tongue is bitten the injury is slight. Post-epileptic automatism does not occur after hysterical fits, but it is not at all impossible for a hysterical fit to occur in conjunction with a fugue which would be practically indistinguishable from a post-epileptic automatism, so that it is impossible to lay down any hard-and-fast rule on this point.

Certain conceptions suggested by Dr. Henry Head at a meeting of the South-Western Branch of the Medical Psychological Society appear to illuminate the connexion between hysterical and organic fits, and indicate that they should not be regarded as antithetical. He has kindly consented to my making use of these in the present paper. The epileptiform convulsion is a liberation of motor energy

determined by the release from control of motor centres normally dominated by higher levels in the neuropsychical hierarchy. The fit will vary in nature according to the degree of control which has been removed. The whole nervous and mental mechanism of the human organism may be conceived as being built up on a series of functional levels, each of which controls and guides the levels below it. In the zone of physical nervous mechanism this can be observed clinically when, owing to certain lesions, stimulation of the foot causes a dorsi-flexion of the toe and a voiding of the bladder and rectum as the result of the removal of all higher control. Both phylogenetically and ontogenetically this reflex is primitive and the various less primitive higher reflexes normally control it. In other cases the contents of the bladder and rectum are retained, the control of these reflexes being intact, while the toe is still dorsi-flexed, for the level of the toe reflex control is relatively high, its biological significance being connected with the erect attitude. Admittedly, the exact delimitation of these levels is still far from being determined, but at the upper end of the scale they appear quite definitely again. It is generally admitted that the emotions acting as part of the various instinctive processes are the driving forces of our coördinated activities, but emotional forces acting unchecked result in inefficient utilisation of energy, whereas if this force is guided by reason and intelligence useful activity is produced. Here we definitely see a higher level guiding and controlling a lower level. Below the developed emotional level are the various less coördinated mental activities which psychotherapy in its investigation of the unconscious mind is gradually bringing to light.

It is suggested that the organic fit so-called is a liberation of motor energy produced by the removal of control down to a relatively low level, and therefore accompanied by the dorsi-flexed toe and the voidance of excreta, whereas the typically hysterical fit with violent movement of the limbs is due to liberation of energy caused by the removal of control of only the relatively high levels. Suggestion acting on the subconscious mind will tend to modify the neurone paths through which the motor activity finds expression, so that the nature of the hysterical fit will be largely determined by this suggestion. Hence we see cases in which the hysterical fit has begun as the mere emotional overflow described above, but as the result of repeated inquiries as to what he did in his fit and whether he presented this or that symptom, the patient has accepted the suggestion that he should manifest these symptoms. As a result of this the fits have changed in nature and have come to resemble organic fits much more closely, possibly by the resultant removal of further levels of control.

Prognosis and Treatment.

There should only be one word as to prognosis in hysterical fits, and that is "cure," which should be as certain as it is in other hysterical manifestations. There are two methods open to the physician; one is hypnosis and the other autognosis, to make use of the admirable term suggested by William Brown. Which will be chosen will depend on the physician and on the patient. If the patient lacks intelligence, so that he cannot follow the arguments necessary for the second method, hypnosis may have to be used, and if the physician has unbounded faith in hypnosis and confidence in its results he will probably employ this method with greatest effect.

In treating a case of hysterical fits by *hypnosis* the object is to produce in the patient a strong counter suggestion against the fit. Patients who are suffering from hysterical symptoms are ipso facto suggestible, and therefore there is never any difficulty in getting them under the influence of light hypnosis: deep sleep is not necessary to produce the effect, nor is it desirable. Having placed the patient in a comfortable position and suggested to him that his eyes will grow heavy and that he will fall asleep, several courses are open. If it is quite clear what was the origin of his fits, this may be explained to the patient while under hypnosis, and the suggestion is given that this exciting cause is in the past, and that no more fits will occur. Or it may only be necessary to suggest that there will be no more fits. In cases where it is considered desirable to produce a gross suggestion a fit may actually be produced while the patient is under hypnosis, and he may be told that this is the last he will have.

For my own part I very much prefer the method referred to as *autognosis*. By this is meant that the patient is afforded insight into his own condition and made to understand the pathogenesis of his illness. There can be no question that a great deal of suggestion is involved in this method of treatment, but it differs from the hypnotic methods, inasmuch as the patient is aware of what is going on all the time, and is invited and encouraged to coöperate in the treatment by the exercise of his reason and his will. This appeal to the patient to use his mind to work out his own salvation is, in my opinion, what makes this method much superior to that of hypnosis, for the patient as a rule is one of those inert individuals who would rather that other people would think and act for them. In common with other hysterical symptoms fits may occur in any individual given the requisite conditions, but they are very frequently met with in patients who are also psychasthenics. This makes no difference to the treatment, since autognosis is a method which is eminently suitable in this latter condition.

In carrying out this method of treatment the first thing to do is to gain the patient's confidence, and at the first interview it is as well to let him do most of the talking, encouraging him to tell you fully as to his health, as to how his fits began, or were increased in frequency. From this story it may be quite obvious how the fits developed. In other cases, especially where the fits date from early life, the patient may not remember the details of how the trouble commenced, and in such cases it may be necessary to probe more deeply into his mind. Help may be got in this direction from an analysis of his dreams, which frequently have to do with the buried memories of the past. It is not possible to enter into the details of dream-analysis here or to describe how the past may be brought back, but in war cases it will be found that this is, as a rule, unnecessary, there being no difficulty in discovering the origin of the condition. The next step is to find out under what conditions subsequent fits developed, and here it will generally be found that some emotion has brought on the condition, whether of anger, fear, joy, or sorrow. It is then pointed out to the patient how the fits have followed an emotion, and are, as has been explained above, a fruitless substitute for coördinated action. He is then told that his emotional energy must in future be redirected into more efficient channels, and for this purpose his mental make-up and attitude towards life must be stabilised. To do this it is necessary to investigate and bring to light the conscious and unconscious worries and problems which are disturbing the patient's peace of mind. He must then be got to set the proper value on his worries instead of running away from them. Next he must be trained to develop his powers of concentration and memory by appropriate mental exercises, and at the same time be given some congenial employment, such as farm work, carpentry, or the like, which will employ his time and train his muscles. In this way he becomes less liable to be dominated by his emotions, and his energy, mental and bodily, is directed into useful directions. At first these cases are best kept in isolation rooms or small wards, but as they get more confidence in themselves and their minds become more stable they should be sent into larger wards, and finally be encouraged to join in the general life of the hospital community, so as to train them for the give-and-take of life in the world.

This line of treatment is equally adapted to the patient who suffers from fits which are purely hysterical and to him whose fits are a combination of hysteria and "organic" epilepsy, and in the future the mixed class is likely to be the most important; in fact, these considerations call for a drastic revision of our conceptions of epilepsy. In a case in which we have seen one fit which is obviously organic we must not jump to the conclusion that they are all so and be content to order bromide. As has been said, it is probable that the true epileptic fit is of relatively infrequent occurrence, and if we can cure the greater percentage of these fits by means of psychotherapy we are conferring an inestimable benefit on the patient himself and on his relations. The man who has a fit once a fortnight may be a reasonably useful member of society and a possible companion to his friends, but the man who has fits every day is a millstone hung about the neck of the nation and an insupportable burden to his relatives. The same argument applies to the patient who suddenly resumes having fits after a long period of remission; though the earlier fits may have been organic,

it is likely that the latter ones are hysterical, and therefore amenable to psychotherapy.

In conclusion, it is necessary to point out that fits may be consciously feigned. They differ, then, from hysterical fits in being under the control of the active consciousness, instead of being under the control of the subliminal consciousness. They will vary with the subject's conception of what epilepsy ought to be like, just as is the case in the hysteric, but the malingerer has to put himself to a very great strain to maintain his rôle, and consequently, if under close observation, he may be forced to confess his deceit.

Conclusions.

Therefore I would urge that so far as hysterical epileptiform convulsions are concerned, their recognition should be tantamount to their removal, and if there is any truth in the conclusions drawn from Dr. Head's observations there is hope in the future even for the so-called organic variety. At present our knowledge does not allow us to train our patients to restore control of their activities at so low a level as that at which the organic fit originates in the same way as it is possible at the emotional and subconscious levels, yet it does not seem impossible that the future may show us an answer even to this problem.

THE TREATMENT OF LUPUS VULGARIS.

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THE successful treatment of lupus vulgaris is a problem beset by many difficulties. A large majority of the patients who suffer from this affection are drawn from the less fortunate ranks of society: from the habitually underfed, insufficiently clad, and ill-housed denizens of our large cities. The conditions of their life are opposed to the effectual eradication of the tubercle bacillus. But persevering treatment, guided by judgment founded on experience, will sometimes work wonders even in the most extensive cases.

A first essential for successful treatment is to know what cases to tackle. Not every case should be put under treatment at a first inspection. For instance, there is neither necessity nor justification for proceeding to attack an isolated patch of lupus of small dimensions which is perfectly quiescent, producing neither discomfort nor serious disfigurement, and which has existed for years without much tendency to spread. Five years ago a medical friend referred to me a lady patient, aged 46, who for more than 20 years had had a patch of lupus on the right cheek, a little in front of the ear. In area it was slightly larger than a shilling. It was inactive, and the patient did not think it had increased appreciably in size during the previous ten years. She was able to conceal it almost entirely by bringing a curl of hair over it, and the "camouflage" was completed by the application of a little calamine lotion. I advised against any active interference, and when I last saw her the patch was apparantly undergoing gradual resolution.

Another essential for successful treatment is the choice of an opportune moment. It is unwise, and may lead to disastrous results, to subject a patch of lupus which is in active evolution to anything but sedative treatment. Active mechanical treatment may serve only to stimulate the morbid processes. In such a case the application of lead and spirit lotion, or a varnish of ichthyol and water in equal parts, or starch and boric poultices frequently changed, will often cause the active manifestations to subside, and once the disease is quiescent it may be dealt with effectually. There is no royal road to success in the treatment of lupus. The methods at one's disposal are legion. But each case must be dealt with on its merits, for the line of treatment that has served well in one case may be of little avail in another. Most often good results are secured by a judicious blending of varying applications or procedures.

METHODS.

1. *Excision.*

Where one has to deal with an isolated patch of the disease, not too extensive to allow of excision without the danger of undue disfigurement, the best procedure is to cut it out.

In 1902 I saw at hospital a girl, aged 5, with a patch of lupus the size of sixpence on the right cheek over the inferior maxilla. Two other members of the family also suffered from lupus, a sister, aged 8, having a large patch over the left deltoid muscle and a brother, aged 9, suffering from extensive lupus of the face. Under a general anæsthetic I excised the patch by a lozenge-shaped incision, cutting widely outside the disease and carrying the incision deeply into the subcutaneous tissues. The edges of the wound were drawn together with horsehair, one deep suture of chromic gut being used to relieve the tension on the finer stitches. The result was a satisfactory linear scar. I saw the patient in September, 1919, 17½ years after the operation. She had grown into a robust young woman, and the scar of the excision was almost invisible. There had been no recurrence of the disease.

Unfortunately, by the time most cases of lupus come to hospital the mischief is too widespread, even if it is in a suitable situation, to permit of excision with such satisfactory results. One is therefore glad to fall back upon other methods. Many are available, but in the choice of which to employ two things must be kept in mind—viz., (*a*) the complete eradication of the disease; and (*b*) the avoidance of undue scarring.

2. *Chemical Agents.*

The treatment by the local application of caustic agents will, in some cases, give excellent results. Many caustic applications have been recommended, but in my opinion pyrogallic acid is the best. It is best applied in the form of a 5–10 per cent. ointment—i.e., 24–48 grains to the oz. A base of equal parts of lanoline and vaseline supplies a sufficiently adhesive unguent. The ointment should be spread on lint, the weaker strength being used for children, and the stronger for adults. After a few days the pyrogallic acid begins to break down the lupus patch, and an ulcerating surface is produced. The dressing, changed night and morning, should be continued as long as the patient can bear it. When severe pain supervenes—or earlier in the case of children—the application should be stopped and the ulcer dressed with starch and boric poultices. This soothing application rapidly brings about a restitution of epithelium over the tubercular tissue, and when this stage is reached it will be found that the lupus patch is considerably thinner. The application of pyrogallic acid should then be renewed, and the patch broken down once more.

After this process of alternately breaking down and healing up has been repeated several times it will be found that a considerable portion of the lupus tissue has been completely destroyed. The isolated nodules left behind may then be destroyed by boring into each of them the solid nitrate of silver stick.

In some ways this method of treatment is an imitation of the process by which Nature endeavours to cure lupus. A lupus patch tends to break down in the centre and spread at the periphery. In an old-standing case one frequently sees an area of atrophic skin in the centre, studded over with a few scattered nodules. The atrophic skin covers the site of an old spontaneous ulcer, and the ulcerative process has destroyed much of the tubercular tissue. Pyrogallic acid enables us to set up such an ulcerative process at will and to keep it more or less in control. Its only disadvantage is the pain which it causes. The ultimate result of this treatment is a smooth, pliant, and not unsightly scar.

Other caustic agents, such as arsenic and salicylic acid, may also be employed, but pyrogallic acid seems to have a special affinity for tubercular tissue, and I prefer it to other chemical agents.

3. *Curetting and Scarification.*

Curetting a lupus patch has long been regarded with favour. If thoroughly done under general anæsthesia it frequently yields good results, but results are much improved if linear scarification is employed as well. For some reason linear scarification has had a much greater vogue in France than in England. Its proper performance demands considerable attention to detail. It should be carried out with a scarifier, of which there are many patterns. Personally I prefer one with six blades, and it is most important that the blades be sharp. If not keen, they tend to tear rather than mince up the tissues. In using the scarifier one should begin on the healthy skin just outside the lupus patch, and then proceed to scarify the tubercular tissue first in one direction, then in another, crossing and re-crossing until the whole is reduced to a pulp. To be systematic, one should

make the first series of cuts vertical, the next horizontal, and the next diagonal from left to right, and the next diagonal from right to left, and then repeat the process several times.

There is usually considerable bleeding which may be controlled by pressure. When the tissues have been thoroughly chopped up and the bleeding arrested, the part should be dressed with a simple ointment such as ichthyol gr. 2, vaseline 1 oz., or a dressing of ung. glycerini plumbi subacet. may be applied, which has the advantage of producing an exosmosis that flushes the part with serum.

To get the best results from linear scarification, one must repeat the process every 14 days or so, carrying it out with thoroughness on each occasion. It gives rapid and excellent results, especially in cases of lupus where the end of the nose is in danger of destruction. An objection has been raised to the method on the ground that by opening up blood-vessels it may lead to the dissemination of tubercle bacilli through the system from an isolated patch of disease, but experience has taught that this is a theoretical objection, and I have never seen any untoward result follow the use of the method.

4. *Refrigeration.*

Another mechanical means of dealing with lupus is refrigeration with solid carbon-dioxide snow. The penetration of the cold from the ether or acetone-CO_2-snow mixture is not sufficiently deep to get good results in any but the most superficial cases—but firm pressure with a moulded piece of carbon dioxide snow cut a little larger than the patch it is intended to treat, for a period of 1½–2 minutes produces a deep slough. After this has healed it will be found that much of the tubercular material has been thrown off. If what is left is still an infiltrated mass the freezing process may with advantage be repeated. But if all that remains of the disease is a crop of scattered nodules, they may be destroyed individually, either with the solid silver-nitrate stick, or by ionisation with zinc in a manner to be described later. The scar that follows the treatment of lupus with CO_2 is, as a rule, an excellent one, pliant, elastic, and not much paler than the surrounding skin. Carbon dioxide snow is of special value in cases where (*a*) the lesion is on the cheeks; (*b*) when it is single and not too extensive; and (*c*) when it is hypertrophic rather than atrophic in type. It is also very valuable for melting down the thickened edge of an extensive and spreading patch of the disease.

But there are two classes of cases in which it should be used with caution—viz., the elderly, and also the half-starved slum child whose vitality is not sufficient to enable his sound tissues to react favourably after exposure to such intense cold. In such children I have seen the application of CO_2 bring about an extension rather than an arrest of the disease.

5. *Electro-Therapeutics.*

When the X rays were first employed in the therapeutics of the skin great things were expected from their use in the treatment of lupus, and even with inexact dosage and irregularity in the quality of the rays some very favourable results were obtained. But there is little doubt that the indiscriminate use of X rays in the treatment of lupus was responsible for the development of not a few cases of epithelioma. Such untoward happenings were, perhaps, unavoidable in the earlier days when the deleterious after-effects of the rays were less well-known than they are to-day. Within the last four years I have known two women, who had suffered from lupus affecting the greater part of the face, who some 18 to 20 years ago were treated by repeated exposures to the X rays, die of epithelioma which supervened upon their lupus; and at present I have under my care a woman with a huge and inoperable epithelioma that has developed on the top of a lupus from which she has suffered for over 30 years, and which has had a great deal of X ray treatment. With such cases as these in memory one limits the use of X rays in lupus cases with care, reserving it for ulcerated cases, which are often dried up rapidly and stimulated to heal by a few careful exposures, or to chronically thickened cases where one is anxious to produce some thinning of the patch. Nowadays I rarely apply X rays to a patch of lupus except through a layer of boiler felt. This cuts off the softer rays which may have a prejudicial effect upon the epithelial cells and allows the harder rays to penetrate to the corium in which the tubercular mischief really lies. In Copenhagen and Berlin before the war I have seen lupus treated with repeated full pastille doses of X rays at intervals of a month, but it seems to me there is grave danger in such a procedure. I prefer to give a third of a pastille dose, through felt, fortnightly, and rarely carry the X ray treatment further than to administer in all two full pastille doses.

There are so many other safer and equally effective methods of treating lupus that one has no justification for treating every case indiscriminately with the X rays. The treatment of lupus with the ultra-violet rays (as introduced and perfected by Finsen) has yielded extraordinarily good results, especially when carried out with the meticulous attention to detail which rules in the famous Light Institution at Copenhagen. But the expense, the cumbrous apparatus, the prolonged treatment, and the need of highly skilled and very patient operators has stood in the way of its general adoption. Fortunately, however, other means than those devised by Finsen of applying the ultra-violet rays have been discovered, and many small lamps with a large output of violet rays have been introduced. One of the most useful of these is the mercury-vapour lamp introduced, I believe, by Kromayer. I have had a fairly long experience of its use, and am bound to say that for rapidity of action and cosmetic results it presents advantages over the original Finsen lamp. In my experience the best results are obtained by somewhat diffuse radiation of the affected part. I cover the adjacent skin with lead-foil, leaving a border of sound skin about ¼ in. broad uncovered all round the lupus patch. This sound skin and the lupus patch are then exposed to the rays of the lamp, the front lens of which should be at a distance of 3 in. from the part to be treated. In many cases there is a mild sensation of burning felt by the patient, but this rarely becomes intolerable. Children can easily stand seven and a half minutes exposure, and adults tolerate ten minutes without complaining. The rays of the lamp have, I believe, a definite germicidal action, but in addition they set up a violent erythema in the part exposed, which may or may not be attended by superficial blistering. By increasing the blood flow to the part the treatment probably exposes the tubercle bacilli to the attack of a larger host of phagocytes than usual. Whatever the rationale of the treatment, the results are excellent, and I have known cases of lupus that have proved very resistant to other methods of treatment begin to improve immediately they were exposed to the rays of the mercury-vapour lamp.

The following is an illustrative case:—

A child of 12 months, some weeks after a slight febrile attack, was found to have scattered patches of lupus on the face and buttocks. She received weekly treatment with the mercury-vapour lamp, each lesion being exposed separately for five minutes and the lens being at a distance of 3 in. from the skin. She began to improve at once, and after 24 exposures the lesions had completely disappeared, leaving scars that could hardly be detected. I saw the child in May of this year, nearly two years after the treatment had ceased. There had been no recurrence of the mischief and the cosmetic results were excellent. In fairness it should be said that this was the child of parents in comfortable circumstances, and that it did not suffer either from shortage of food or scantiness of clothing. Its circumstances were advantageous, but I am of opinion that the mercury-vapour lamp was the chief agent in bringing about its recovery.

Recently I have been making use of an electric lamp with electrodes of pure tungsten. These electrodes burn with a flame that is very rich in ultra-violet rays, with actinic qualities of such virulence that to look at the light without deep-blue goggles is to develop immediately considerable irritation of the conjunctiva. I apply the rays in exactly the same way as the light from the mercury-vapour lamp, but if one desires to irradiate a large surface at a time the lamp may be placed at such a distance from the patient that the whole area is irradiated, the length of exposure being increased in direct proportion to the ratio subsisting between the distance of the lamp and the standard distance of 3 in. For instance, if the lamp is 12 in. from the patient the normal exposure of five minutes should be increased to 20 minutes. ($4 \times 3 = 12 : 4 \times 5 = 20$.) So far, the results I have obtained have been very satisfactory.

6. *Treatment by Ionisation.*

For the destruction of scattered nodules of lupus tissue I know of no more rapid or efficient means than ionisation with zinc salts. In this procedure the success depends entirely on attention to technique. Little, if any, good will result from ionising a patch without first ensuring that the ions will penetrate the nodules. This end can be attained

by breaking down the ill-formed epithelium which covers the nodules. The electric current will concentrate itself at these points, where the tissues being moist offer less resistance to its passage, and the ions will stream in through the broken surface like sheep racing through a hole in a hedge.

As a preliminary, therefore, to the treatment of a patch of lupus with zinc ions, I briskly rub the area to be treated with a pledget of cotton-wool soaked in liquor-potassæ (B.P.). This denudes the nodules of their epithelial covering, while it leaves the sound epithelium of the adjacent skin almost intact. The nodules are thus exposed, and appear as moist gelatinous-looking masses embedded in the skin. The alkali is then removed by wiping the part with a little distilled water. A pad of two thicknesses of lint soaked either in 2 per cent. zinc-chloride solution or in a 10 per cent. solution of zinc-sulphate is then laid over the area to be treated, and an electrode of pure metallic zinc attached to the positive pole of the battery is applied with firm pressure. The indifferent electrode is applied to any convenient part of the body. A current of 2–3 milliampères per square cm. of area treated is applied for 10, 15, or 20 minutes, varying with the extent of the disease and the tolerance of the patient. At the end of a treatment the lupus nodules are found to be dry and glazed and surrounded by a whitish collar of coagulated albumin. Considerable redness and swelling follow the treatment. The part may be dressed with a detergent lotion, in which case a crust will form, or it may be dressed with a simple ointment. The reaction subsides in about a week, and the treatment may be repeated at fortnightly intervals. It leads to a rapid disappearance of the nodules, and the scar left after careful ionisation is better, in my opinion, than that obtained by any other method except Finsen's original method. Ionisation with zinc salts is a particularly useful method of getting rid of any nodules that may be left after a course of X ray or Finsen light treatment. But it may also be used with advantage in any form of lupus vulgaris, and in the treatment of ulcerating lupus it may be used alternately with the X rays. It is also very useful in the treatment of lupus affecting the mucous membrane of the nose. Here a 2 per cent. solution of zinc-sulphate should be employed, the affected nostril being packed with a pledget of cotton-wool soaked in the solution and a suitably shaped electrode inserted into the centre of the packing.

7. *Electro-cautery.*

But the method *par excellence* for the treatment of lupus affecting the mucous membranes, either of the nose or mouth, is cauterisation with the electro-cautery. For this purpose a preliminary anæsthetising of the mucosa by the application of cocaine or novocaine is necessary. The current should be carefully graduated before commencing the treatment. It should be strong enough to raise the cautery point to a dull-red heat and nothing more, as the object is to char the part slowly rather than burn it quickly. A good light is directed upon the part to be treated and the cautery point is applied cold to the centre of the affected part. The switch in the cautery handle is then closed and the part cauterised.

To use this method effectively it is advisable to make a series of punctures all over the affected mucosa at short distances from each other. If the platinum point is not too hot there will be little, if any, bleeding—there ought to be none—and the after-pain is infinitesimal.

To a greater extent than is perhaps appreciated, the nose is the portal by which the tubercle bacillus finds access to the skin of the face, and one should never feel assured that a patch of lupus, either on the outer surface of the nose or cheek, is completely cured until the condition of the nasal mucous membrane has been thoroughly investigated and any tubercle mischief there eradicated.

8. *Tuberculin.*

In my experience the treatment of lupus with tuberculin has been disappointing. Any improvement obtained has been only temporary and the patient has rapidly relapsed.

9. *Salvarsan.*

I have not tried salvarsan for lupus, but I have seen patients who had received that remedy at other hands. The benefit would seem to have been but transient. In so far as it improves the patient's general health and so raises his resistance it is calculated to do good, but salvarsan and its congeners do not seem to have that lethal affinity for the tubercle bacillus which they have for the spirochæte.

CAUSES OF DISEASE AND DEATH IN THE ANTENATAL PERIOD.[1]

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HOWEVER elementary may be our knowledge of biological laws, our reason and our training alike forbid us to take into consideration only the antenatal period (the time between conception and birth) in discussing disease and death in relation to a child. The period of time which the scope of this paper covers is purely conventional, and having made this clear I will proceed to bring before your notice some few of the innumerable factors which affect our inquiry into the ætiology of disease and death in the antenatal period.

The Educational and Social Factor.

In relation to established customs and practices.—The currently accepted belief of the laity as to a different social code for a man as distinct from a woman is not without profound effect. I venture to suggest that the results arising directly or indirectly from that hydra-headed doctrine profoundly influence the success of our work in the public health service.

Another illustration of the need for further educational work is the theory "that any space enclosed within four walls is suitable for a woman's confinement." The home may be clean or dirty, furnished or unfurnished, crowded or empty, devoid of sanitary conveniences or supplied with them; but for a woman to be confined anywhere but in her own place is still considered a tragedy in the lower middle classes. Another belief that holds almost universal sway is "that so long as the pregnant woman has engaged a neighbour, a midwife, or a doctor, and has given the approximate date of the expected confinement, she has merely to 'carry on' until the time comes for her to be delivered." It is gratifying to think that on this latter point at least we are not content to let things drift.

These three beliefs, when put into practice, account for a goodly proportion of disease and death in the antenatal period.

And, lastly, dealing with the educational aspect of the work among the laity, is it not about time that to boys as well as to girls we really began systematically in the schools to give them physiological teaching about their own bodies and their functions?

I have not as yet found any detailed analysis giving facts ascertained why the deaths of illegitimate children in general are just twice the mortality-rate of legitimate. I make the suggestion that ignorance of sex functions has more to do with the production of the unmarried mother than has previously been suspected, just as much, indeed, as my experience during the last 10 years in work amongst children has profoundly impressed me with the ignorance of the average married woman with reference to the way of rearing her baby. The function of reproduction is as much a gift of nature as health or stature; but whether we squander it with a prodigal hand or spend it wisely depends primarily upon knowledge, not upon intuition or gossip or old wives' tales.

In relation to professional knowledge.—Turning next to the second subdivision in the educational and social group, I have termed this "professional." It has two aspects—first, the definite teaching of the laity by our profession, whether by direct or indirect means, of the things we *know*. There is another aspect of the case which I specially wish to emphasise. While public ignorance is profound and difficult to combat, the real difficulty lies in our own ignorance of the many factors necessary to a fuller understanding of the ætiological factors of disease and death in the antenatal period.

The duty of research work is as imperative as our duty to prevent or to cure disease.

(1) *Inadequate statistical returns.*—I am greatly indebted to the courtesy of Dr. J. W. Ballantyne, of Edinburgh, for a masterly survey of the outstanding problems, and I propose to quote some of his suggestions and conclusions. He proposes in the first place that a definite place be assigned in our statistics to those deaths which occur in the first four

[1] Delivered before the Annual Congress (Section of Hygiene), Royal Sanitary Institute, held at Newcastle-upon-Tyne, July 29th, 1919.

weeks of life. He defines this period of time as neonatal and gives a close analytical picture of the birth- and death-rates for Edinburgh, for the period 1911 to 1917.

	1911	1912	1913	1914	1915	1916	1917
Birth-rate	20·8	19·7	19·4	19·8	17·8	17·4	14·7
Infantile death-rate (per 1000 live births)	115	110	101	110	132	100	123
Neonatal death-rate... ...	42·2	44·9	40·6	43·7	43·8	44·8	41·5

He defines the word "*neonatus*" as the new-born infant, or more exactly, the infant during the first four weeks of its life, and the chief maladies arising at that period are icterus neonatorum, trismus, sclerema neonatorum, ophthalmia neonatorum.

It will be seen from the foregoing figures that the neonatal-rate never fell below one-third of the total infantile death-rate.

He next points out that this rate does not vary *pari passu* with the infantile death-rate—vide figures for 1916 and also 1915. He gives figures in support of the belief that in 1916 the neonatal-rate was higher among legitimate as compared with the illegitimate births, whereas in 1917 the reverse held good.

1916 figures	49·4 legit.	.....	47·4 illegit.
1917 ,, ...	38·0 ,,	.....	76·0 ,,

In 1917 the illegitimate birth-rate rose to the high total of 10·1. He suggests that to enable us to deal adequately with the causes of infantile mortality we should have: (1) a conception-rate; (2) a sterility-rate; (3) a miscarriage-rate; (4) a separation of the neonatal deaths from the others which occur in the first year of life.

The first four weeks of life in comparison with the first 12 months of extra-uterine existence represent 1/13 of the time. The neonatal-rate (the word is Ballantyne's) is never less than one-third of the total infantile death-rate, and may become approximated to one-half the total. It is therefore obvious that special investigation is required to grapple with this appalling death-rate in the first four weeks of life.

(2) *Inadequate pathology.*—As throwing some light on Ballantyne's appeal for further professional knowledge, I quote the findings of Whitridge Williams in his published results on an investigation into the causes of fœtal deaths in 10,000 consecutive deliveries. The figures will serve to illustrate the importance of the educational factor in the ætiology of disease and death in the antenatal period.

Syphilis was identified in 26·4 per cent. of the cases, but the greatest group of all, 33·2 per cent., was one which comprises (under the heading of ætiology)—(1) various, (2) inanition, (3) debility, (4) unknown!

Not one of these words conveys a pathological entity. Ballantyne might well call for a greater scientific accuracy in dealing with neonatal mortality certificates. Added together we get a total of roughly 60 per cent. of deaths in the neonatal period. And the only definite pathological feature recognised was syphilis.

The Johns Hopkins figures *re* analysis of fœtal deaths showed "prematurity" as accounting for 7·10 per cent. The Edinburgh figures quoted by Ballantyne for 1915-16-17 showed that one-half of the deaths was certified as due to prematurity. He questions the accuracy of the statement, and suggests that the same scientific accuracy ought to be brought to bear upon the autopsies of the newborn as upon those of mature years. He concludes as follows: "Prematurity of birth, therefore, is rather a causal circumstance than a direct cause, and until more accurately stated causes of neonatal deaths are being recorded in certificates it is futile to speculate on the real root of neonatal mortality, and to devise measures to counteract the dangers which threaten this time in life."

Amand Routh, quoting Holt and Babbitt, states in his paper, entitled "Need for Medical Supervision During Pregnancy," that 66 per cent. of the deaths occurring on the first day, and one-half of the total deaths within the first 14 days, were due to prematurity.

The statistics of Queen Charlotte's Hospital for 1914 show 12·9 per cent. of total deaths as premature. St. Mary's Hospital, Manchester, for 1914 reports that the premature births were 20·4 per cent. of the total births. Dr. Routh's summary under the heading "Prematurity" is well worth quoting. "The precise significance of the word 'prematurity' needs standardising." Now let us survey these few figures. They are derived from hospitals of repute, and we have not the slightest basis for believing that the statisticians concerned are incompetent: Queen Charlotte's, 12·9 per cent.; St. Mary's, Manchester, 20·4 per cent.; Johns Hopkins, 7·1 per cent. The certificates upon which these returns were based were each labelled "prematurity."

Eclampsia and hyperemesis gravidarum.—These conditions also deserve mention under the subheading of further professional education, as they can only satisfactorily be investigated in a research department of an obstetric hospital. In both cases they are certainly recognisable as clinical entities, but the explanation of their occurrence, or any definite knowledge of how they may be prevented is, so far at least, wanting.

Four other conditions having special reference to the female generative organs and at the same time bringing a profound influence to bear upon disease and death in the antenatal period are ectopic gestation, placenta prævia, hydatidiform mole, and dystocia.

From this brief summary of educational needs, both of the laity and the profession, we can see many avenues waiting to be explored, all of which would lead us to a clearer knowledge of how to lessen the incidence of disease and death in the antenatal period.

The Environmental Factor.

Mental Environment.—The second great subdivision of the ætiological factors in the problem before us is one which a have called environment. The woman about to become I mother reacts in a greater or less degree to her environment. One of the pressing problems is the care and interest we are prepared to take in the case of all pregnant women in general, but of the unmarried woman in particular. It is a well-known fact, illustrated by statistics with almost ceaseless monotony, that the death-rate amongst illegitimate children is approximately double that of the legitimate. Ballantyne quotes one exceptional year when the reverse held good. I suggest that this difference in mortality is due largely to the life of solitary loneliness to which too often the woman is banished by the social code. Do we sufficiently appreciate the importance of the mental environment?

As professional men and women we should define our relationship to the problem of the unmarried pregnant woman. I have known of more than one Welfare Centre in which an attitude perilously near Pharisaic rigidity obtained. For my part, I do not think that we should be baulked even in the slightest degree in our efforts to save and build up for the Empire all babies, legitimate or not. And if we are to reduce the mortality rate of illegitimate children we shall have to attack the problem of the environment in the antenatal period of the child's mother.

Structural environment.—The second subdivision of the group, environment, I have called "structural environment." Fifty years ago Sir John Simon said that one of the causes of the high infantile mortality rate was: "Common sanitary defects of residence, foul air, foul water, locality and houses undrained, unpaved, unscavenged, unwashed, unlighted, unventilated." Unfortunately, the statement is not inapplicable even now. It seems to me as an outsider that the preventive branch of the public service must lose heart and faith more frequently over this question than over any other. To give birth to a child in any hovel, whether it be as inadequate from the point of view of sanitary science, as the foregoing description or no, is bad enough, but the task of carrying on household and maternal duties in a defective structural environment, while at the same time she carries the developing embryo, is one to which no woman should be subjected.

Industrial environment.—The third subdivision of the group environment refers to industrial conditions. It was the considered opinion of Sir John Simon that one of the causes contributing to infantile mortality was "the employment of women away from home, resulting in neglect of house and children."

Curiously enough, this explanation was accepted at the time by most people, but later researches have thrown some doubt upon its accuracy.

The report of the medical officer of health for Blackburn for 1915 gives the result of an inquiry into the rate of mortality amongst children of industrial and non-industrial mothers respectively. The results are certainly in favour of non-industrial mothers, but the difference is not very great.

In 1914 a special Local Government Board inquiry was undertaken in Lancashire in seven towns, selected because

of the high proportion of married industrial women. The published results, however, were indefinite. I have emphasised the question of industrial environment because further investigation is urgently required thereon.

The Toxic Factors.

The third ætiological group is the "toxic" group. This in turn may be divided into two sub-groups: (*a*) chemical; (*b*) organismal. As illustrative of the former I mention lead and alcohol, and of the latter, gonorrhœa, syphilis, specific fevers, and diabetes.

Chemical causes—(*a*) *Lead.*—Newman[2] says that lead poisoning produces abortion in animals, and the passage of the lead through the placenta has been demonstrated. As a result of research on the subject Constantin Paul concluded that though lead poisoning did not prevent pregnancy and did not act injuriously upon fecundity or upon menstruation, it did act upon the infant. Out of his series of cases, 112 pregnancies in all, 20 children out of 36 who died never saw their first birthday. Further, the 112 pregnancies resulted in 55 abortions, 4 premature births, 4 stillborn, and 13 living. Sir Thomas Oliver[3] showed the remarkable ecbolic effect of lead upon pregnant women. A woman, aged 35, before working in a white-lead factory, had four children born at full time. She worked in the lead factory for six years, and during that time she had 9 miscarriages in succession and no living child. An even more interesting case was that of another woman, aged 34, who before going to a lead factory had 4 living children and afterwards had 2 living children. Then she had 6 miscarriages and became the subject of plumbism. She recovered, but left the lead works. She then had another living child.

(*b*) *Alcohol.*—The work of Nicholson (1900) leads one to the belief that alcohol as such may pass from the mother to the fœtus. Sullivan (1899) worked specially on the influence of maternal inebriety in the offspring by inquiry into degeneracy in the descendants of alcoholics. He selected a series of chronic drunkards from the female population of Liverpool Prison who had borne children. He excluded as far as possible tubercle, syphilis, and the neurotic constitution. The cases chosen were those in which alcoholism occurred prior to the procreative career. To the 120 inebriate women were born 600 children, of whom 55·8 per cent. died under 2 years of age or were stillborn.

He also showed that there was a progressive death-rate in the alcoholic family.

	Cases.	Dead and dead-born percentage.
1st born	80	..... 33·7
2nd ,, ...	80	..... 50·0
3rd ,, ...	80	..... 52·6
4th and 5th ,, ...	111	..... 65·7
6th–10th ,, ...	93	..... 72·0

These figures illustrate very clearly the progressively augmenting character of the influence of the mother's alcoholism. These figures, plus the facts elicited and published by the Committee of the Central Control Board (Liquor Traffic) would all seem to point to the fact that the statement made from time to time that alcohol is an individual and a racial poison is fully justified. For as long as we tolerate overcrowding, sweated labour, long laborious work, and monotomy, just for so long will people demand a quick and certain elixir, which, even if only for a time, will enable them to escape from these gloomy surroundings.

Organismal causes of toxæmia.—Of the organismal group the first is that caused by the gonococcus of Neisser. The complications fall naturally under three headings—i.e., direct extension, direct transmission, general absorption—and under the present social code any pregnant woman may become a victim. The Royal Commission on Venereal Diseases points out the close association between alcohol and venereal disease. "Alcohol makes latent syphilis and gonorrhœa active. It also makes the treatment of these two conditions more refractory. If alcohol is absolutely stopped during treatment of syphilis and gonorrhœa the result is much more satisfactory. The facts given point to the conclusion that decrease in the use of alcohol will be an important factor in diminishing the prevalence of venereal disease." With reference to gonorrhœa, the following facts may be of interest. They are found in the report above mentioned. "It is estimated that of cases of ophthalmia neonatorum 70 per cent. of the cases are due to the gonococcus. Bishop Harman found that 24·35 per cent. of the 1100 cases of blindness examined by him were stated to be due to gonorrhœal ophthalmia." There would almost seem to be a natural crescendo movement, whereby this destructive agent grips its victim.

The second organism, the *Spirochæta pallida*, was once regarded as of more importance clinically than Neisser's organism, but in extent of damage, plus difficulty of cure, the latter occupies first place. According to Newman, quoting D'Aulnay, it may produce 100 per cent. of fœtal deaths. Ballantyne gives as his average 46 per cent. of the pregnancies which end disastrously. Fournier says "infection before conception gives a mortality rate of 65 per cent. When infection takes place after conception the mortality is 39 per cent." According to the same authority "the three years following infection are more fatal to pregnancy than later years." The figures given by various authorities as to the mortality rate influenced by syphilis vary greatly. The German figures (Hochsinger) were 44 per cent. of stillborn children due to syphilis. Amand Routh says that in city populations 25 per cent. of stillbirths and abortions are due to syphilis; and further, this same authority says that if 20 per cent. are due to syphilis, about 27,000 deaths occur annually in the antenatal period and in the week following from that cause. Dr. Eardley Holland found the spirochæte in six out of the first seven stillborn fœtuses examined, and in 12 out of the next 18. Weber found spirochætes in 84 per cent. of macerated fœtuses born in the later months of pregnancy. The Wassermann reaction is not always reliable in pregnant women. Clinically syphilitic mothers give a positive reaction during pregnancy, but some pregnant women were negative even when gravid with a syphilitic fœtus.

Adequately to deal with these two scourges will call for all our power of organisation and scientific skill in treatment. It is gratifying to realise that this work is under way, even if it be not as yet under control.

The clinical conditions, eclampsia and hyperemesis gravidarum, have already been referred to. Closely allied to eclampsia is the condition of chronic parenchymatous nephritis. The old view that there was a clinical entity "nephritis of pregnancy" has not, as far as I can discover, been borne out by facts. The specific fevers form another group liable to upset the normal progress of pregnancy, and another condition of grave significance is diabetes. I have included it among the toxæmias because of the effect on mother and fœtus of the circulating oxybutyric acid and its immediate derivatives, diacetic acid and acetone. Finally, in this group I would mention the various conditions met with in adult female life in which the *Bacillus tuberculosis* plays a most important part.

The "Constitutional" Factor.

The fourth and last section dealing with the ætiological factors can only be briefly referred to. For the sake of convenience, and as a mental peg upon which to attach a few facts, I have called it the "Constitutional" group. The indefinite ætiology of the group of children comprised under the Mental Deficiency Act, 1913—idiots, imbeciles, feeble-minded—is important. It is with this group in mind that one is almost compelled to the belief that factors are at work either in father or mother, or both, which eventually produce the conditions we call microcephaly, cretin, or Mongol. Purves Stewart[4] says: "It is a mistake to marry a widow, however young and charming, who has a pseudo-hypertrophic child." If this is so, the ova of that woman must be blasted before fertilisation occurs, and the antenatal period is of no particular account as far as the qualities of the developing child are concerned. The ætiology of melæna neonatorum and of sclerema neonatorum is still undecided.

A Brief Summary of Congenital Defects.

In conclusion, let me review the various systems of the body, noting a few of the recognised congenital defects, the ætiology of which is not definitely decided.

Alimentary system.—Meckel's diverticulum, branchial cysts, congenital absence of the bile-ducts, thyroglossal duct, imperforate anus.

[2] "Infant Mortality." [3] "Dangerous Trades." [4] Nervous Diseases.

Was the oöspore endowed with these potential developments, Nature merely bungling her handiwork during the antenatal period, or was the perfect plan impossible even from the first?

The nervous system.—Porencephaly; congenital facial hemiatrophy; Little's disease; Warren-Sach-Tay's disease.

The vascular system.—Congenital heart disease. Dextrocardia. Absence of the anterior thoracic wall.

Are these antenatal or pre-antenatal in development?

The respiratory system.—Congenital atelectasis; cleft palate; hare-lip.

The genito-urinary system.—Congenital cystic kidneys; extroversion of bladder; undescended testicle.

The muscular system.—Congenital absence of the pectoral group of muscles.

We cannot definitely exclude these and other conditions from any survey of the causes of disease and death in the antenatal period, but must approach our work in the confidence that, with a fuller knowledge, we may be able to prevent their development in the future.

A CASE OF
WERDNIG-HOFFMANN PARALYSIS.

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AND
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CASES of Werdnig-Hoffmann type of progressive spinal muscular atrophy are so rare, less than a score of complete cases being hitherto reported, that we feel that the present case is worthy of record. The disease was described by Werdnig in 1891 and by Hoffmann two years later. The cause is so far unknown, nor is there recorded a case of recovery. Its familial character is extremely marked. The present case differs from those previously recorded in that nystagmus was a pronounced symptom and was probably due to the morbid condition of the oculo-motor nucleus; also there was profuse sweating almost from the first. The child was brought up to University College Hospital Infant Clinic, sent there from one of the infant welfare centres in the neighbourhood.

A. G., age 5 months, was admitted to University College Hospital on Dec. 3rd, 1918.

Family history.—Father, a railway porter, has had some weakness of chest, but not asthmatic. Mother an only child of her mother, the latter dying of cancer at age 31, the husband decamping soon after, leaving her an orphan, aged 3. Neither on father's side nor mother's can any similar disease be traced, nor is there any family history of syphilis or albinism. Of this pair there were born:—1st child, male, ten months after marriage, full term, not breast fed. When about three months old the infant "suffered with its chest" and lost the use of the right arm and leg. It had a swelling on the back of the left hand; no nystagmus. The child died, at 6 months, of broncho-pneumonia, paralysed on the right side only. 2nd child, female, born full term, alive and well, aged 9. The child had two "cysts" removed, one from forehead and one from the neck. 3rd child, female, alive and well. 4th child, female; at three months it lost the use of both arms. Paralysis increased and the child died of broncho-pneumonia at 14 months. There was no nystagmus. 5th child, male, born dead; mother had accidental hæmorrhage. 6th child, female, the patient, 5 months old.

Past history of patient.—Born full term, breast fed to a week prior to admission. The first sign of weakness noticed was pronation of forearms at three months. Then the child had "an influenzal attack," after which there was a sudden loss of power of both legs, associated with profuse sweating.

Condition on admission.—The child on admission was plump, of good colour, and well-nourished. There was profuse perspiration. The child's arms were everted and the forearms pronated, so that the backs of the hands were turned toward each other. The legs were flaccid, but moved slightly, the feet more so than the legs. There was no evidence of pain when the child was moved or taken up, though when the child was held erect the head fell limply forward. The muscles of the back seemed more involved than those of the belly, though the chest muscles were so far implicated that expansion was very imperfect, with some recession on inspiration, the breathing being mostly diaphragmatic. The knee-jerks were absent. Eyes: Pupils normal. Definite and pronounced nystagmus, much more marked in the left eye which was involved before the right. Nystagmus was increased markedly when the eyes were turned to the left side.

Dr. Percy Flemming saw the case and notes "the fundus very fair—i.e., deficiency in choroidal pigment, partial albinism; no macular change, no cherry-red spot as in amaurotic idiocy." A week after admission the neck muscles were obviously more involved, and the child, even when crying, lies quite still. The breathing had become almost

FIG. 1.—Anterior horn cells of cervical region from the normal cord of a fœtus aged 7½ months. Obj. 1/6.

completely diaphragmatic. The only muscles in which any electrical response could be obtained were the flexors of the limbs, and those showed a slight contraction to galvanism and faradism, but a large current was used. A throat swab was taken and found free of diphtheria; the spinal fluid was normal and sterile. The temperature was normal throughout, and the child died a month after admission of broncho-pneumonia due to involvement of chest muscles.

Notes of autopsy.—Body pale, neck and upper parts of trunk and arms appear wasted owing to wasting of muscles, but the subcutaneous fat is abundant in this situation and elsewhere in the body. There is a general reduction in the size of many of the muscles, especially pectorals, neck muscles, those of

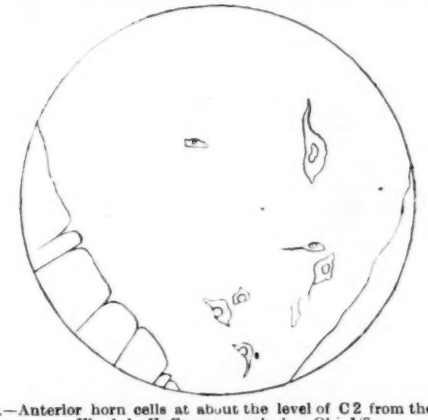

FIG. 2.—Anterior horn cells at about the level of C 2 from the case of Werdnig-Hoffmann paralysis. Obj. 1/6.

thighs and arms, and of erector spinæ. The muscular tissue is pale and flabby, and in none of those muscles examined is there any indication of induration or infiltration with fat or fibrous tissue; orbital muscles and those of abdomen appear normal. No macroscopic changes in brain or cord. Right heart distended, otherwise normal. Lungs emphysematous, patches of broncho-pneumonia. No changes in other organs; tonsils and pharynx normal.

Pathological Report.

Pieces of spinal cord, medulla, pons, and mid-brain were fixed in formalin for ten days and then transferred

to Muller's solution for three weeks. It was unfortunate that all the material was treated in this way, for, though admirable for the study of nerve fibres, satisfactory preparations of nerve cells are difficult to obtain after fixation in Muller's fluid. The stains used were Nissl's toluidine blue, Giemsa, carmine, hæmatoxylin, and Van Gieson, but the best results were obtained with Unna's polychrome methylene-blue, differentiating with alcohol and clove oil. Bielchowsky's silver method (Da Fano's modification) was tried, but owing to the fixation the intracellular neurofibrils did not take the stain. Nerve fibres were studied by the Marchi and Weigert-Pal methods.

The outstanding lesion is a generalised atrophy of the motor nerve cells of the spinal cord, the heaviest incidence having fallen in the cervical and upper dorsal regions. The anterior horn cells are much reduced in numbers. Those that remain are for the most part in various stages of chromatolysis, although a few, not more than two or three in most sections, appear normal. Even these seem, as a rule, smaller than the cells of a healthy child of the same age. In the degenerated cells the nuclei are pyknotic, the protoplasm vacuolated, and the Nissl granules powdery, irregularly distributed, and sometimes absent altogether. Similar changes are present in the anterior horn cells of the lumbar region, but they are not so severe and a larger proportion of normal cells remain. No obvious changes are present in the posterior horn cells. In the dorsal region a few of the cells of Clark's column and the intermediolateral tract are degenerated, but the majority remain intact.

Higher up, in the brain-stem, the cell changes are not so marked. In the upper part of the medulla a few cells in the dorsal nucleus of the tenth and the nucleus of the eleventh nerve are degenerated, but the damage is only slight. The most interesting lesion is met with in the oculomotor nucleus at the level of the inferior corpora quadrigemina. The cells are not reduced in number, but about half of them show some degree of chromatolysis; in a few the Nissl granules have disappeared altogether. Higher up in the region of the anterior corpora quadrigemina the same nucleus shows practically no abnormality, only slight changes in one or two outlying cells being visible. In sections at this level the substantia nigra is seen to be very slightly affected and the cells of the red nucleus are normal. It is possible that the distribution of the lesion in the oculomotor nucleus explains the nystagmus which was observed clinically. The centre for lateral eye movements is partly degenerated, while that for up and down movement is intact.

Weigert-Pal preparations show degeneration of a small area of white matter near the outer surface of the cord between the anterior and lateral columns at the point of issue of the anterior roots, at all levels of the cord. The anterior roots outside the cord are extremely atrophied. The posterior roots are normal. By the Marchi method very little degeneration, only confined to the cervical region, could be observed, most of the lesions being of too long standing to be detected by this method. In the medulla and mid-brain the only abnormality noticed was a very slight degeneration of the fibres of the twelfth nerve. The pyramidal tract was not completely myelinated, but the defect was slight and not more than might be accounted for by the child's age. The blood-vessels are everywhere very much engorged, but this is not unusual in cases of death from broncho-pneumonia. There is no perivascular infiltration. Neuroglial proliferation is not marked, and there is very little evidence of neuronophagia.

Voluntary muscles: Pieces of the sartorius muscle examined show advanced degeneration. The fibres are mostly extremely small, but vary very much in size. Longitudinal splitting has taken place, with the result that many sarcolemma sheaths are filled with numbers of minute fibres; in others, however, only proliferated nuclei are seen. Where splitting has not taken place the fibres for the most part appear homogeneous in substance and stain irregularly. One or two giant fibres are visible, but they are not as large as those which are seen in myopathy. Extensive fibrosis is present between the muscle fibres. Cross striation can be made out here and there, but is the exception rather than the rule. No interstitial or intracellular fatty change is seen in frozen sections stained with Scharlach R. A few globules of fat are present round the vessels between the muscle bundles, but not more than occur normally.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF

SPLENIC ABSCESS WITH ENTERIC FEVER.

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THE occurrence of splenic abscess is rare, but in India it does occur occasionally as a complication of enteric fever or dysentery.

Patient was admitted to Lucknow Hospital with a temperature of 102° F., and with the history of having been ill with fever for 2 to 3 weeks, but just able to carry on with his work in an office. On admission he presented the clinical features of enteric fever. His tongue was dirty and furrowed, his pulse markedly dicrotic. He had a leucopenia. His temperature was 102° and persisted for some days. He had a sparse but definite rose-coloured rash on abdomen. He had constipation, no signs in chest, spleen enlarged and palpable. The blood slide was negative to malaria. His Widal was inconclusive, but he had been inoculated. There was no history of dysentery, and he was diagnosed as clinical enteric. Some six days after admission he complained of discomfort behind the last rib posteriorly and slight pain over spleen anteriorly, and except for a certain fullness nothing was palpable. The pain gradually increased, and 16 days after his admission a definite mass was palpable behind. This was tender and painful, though no local inflammation was present. The spleen now could not be felt, and there was a marked leucocytosis. X ray showed no pathological condition of spine or ribs. Diagnosis: Abscess of spleen. Operation.—Incision over maximum tenderness latero-posteriorly; after going through muscles pus was found and evacuated. It was thick and reddish, not unlike that from liver abscess. The abscess cavity was about size of a man's fist. Kidney seemed normal, spleen could not be felt, last rib felt normal. No caries of spine. The abscess cavity was shut off from abdominal cavity. A large tube was inserted.

Patient's temperature gradually improved, and he made an uneventful recovery.

Lucknow, India.

A CASE OF EXTREME ŒSOPHAGECTASIA[1]

(HURST'S ACHALASIA OF THE CARDIA).

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PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, AND TO THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

THE publication of the following case will no doubt help others to the diagnosis of this curious condition, because it sets forth the symptoms which may be elicited by suitable questions in "suspect" cases.

Mrs. G., a widow, aged 66 years, presented herself for treatment at the Brompton Hospital for Consumption and Diseases of the Chest, because she had become wasted and had a cough. She had been treated at various times for consumption, for bronchitis, and for dyspepsia and debility. The dyspepsia took the form of pain, occurring shortly after taking solid food. The act of vomiting (?) relieved the pain. For years she had lived on liquid food, which caused her no pain or vomiting. Her sputum, such as there was, was free from tubercle bacilli. She volunteered the strange statement that as a girl of 15 she could remember members of her family calling attention to the fact that she was the last to leave the table at meal-times, and her explanation is that she never could take her meals in the same period of time required by the rest of the family; she always had to eat slowly and wait till the food "passed on." So curious was this history that pointed questions were put to her, which led to the following facts being established:—

The taking of solid food was followed by these symptoms: (1) It caused pain at the epigastrium; (2) this pain was accompanied by what she called vomiting, but what was really regurgitation of food; (3) the act of taking the solid food soon provoked a cough; (4) it sometimes happened that she became breathless, and this was particularly so after attempting to take more solid food than usual; (5) liquid food caused none of these symptoms.

[1] Shown at the Clinical Section of the Royal Society of Medicine held on Nov. 14th, 1919.

The patient was radiographically examined by Dr. Stanley Melville, with the result that there was established an extremely marked œsophagectasia. So condensed was the wall of the dilated œsophagus that the picture was very well shown without the use of a bismuth meal. On the administration of the bismuth meal a sharply defined pencil-like portion of it was shown by Dr. Melville to reach from the point of contraction at the lower end of the œsophagus into the stomach. This phenomenon had already been shown by Dr. Melville in some of the cases published in THE LANCET of Dec. 2nd, 1916, and he further showed that the act of deep inspiration intensified the sharpness of this pencil-like appearance, or led to its development, if absent in quiet breathing, and that this periodic manifestation was dependent upon the compression of the large dilated œsophagus by the expanding lungs. The clinical recognition of the condition of œsophagectasia, largely due to Dr. F. Parkes Weber and Dr. Arthur F. Hurst, is now comparatively easy, and radiography has completed the ease of the diagnosis.

The case shows an extremely marked dilatation, and, further, that it is possible when the above five clinical manifestations can be defined to diagnose almost with certainty a condition which, in the absence of such symptoms, would be missed by a physician, and only discovered by a radiographer, who in the routine examination of cases in which bismuth meals were being investigated, paid attention not only to the behaviour of such meals as they passed through the stomach and intestines, but also through the œsophagus.

Harley-street, W.

A CASE OF
LABOUR IN A PRIMIPARA OBSTRUCTED BY A FIBRO-VASCULAR SEPTUM OR BAND.

BY HERBERT A. SMITH, M.D. DURH., M.R.C.S.

SOME seven cases of septa, mostly transverse and incomplete, have been recorded by English and American authorities. The late Dr. C. J. Cullingworth[1] published two cases of transverse septa which occasioned difficulty in labour. Dr. Stone, of Boston,[2] reported five cases of similar septa, in two of which the site was two inches from the outlet, and in the third the vagina was narrowed by a ridge of tissue two inches wide. Dr. J. F. Scott[3] reported two cases where the band resisted the advance of the head and became slit in delivery.

Last summer, while conducting the practice of a friend, I received an urgent call from a nurse who "needed assistance, as the after-affairs would not come along." On arrival I found a child already born (of a primipara, aged 22 years). Half an hour had elapsed, but the placenta remained in utero, obstructed by a fibro-vascular band of a crescentic shape, drawn across the os uteri. Starting by a round fibrous cord from the roof of the vagina—its fibres intimately incorporated with the floor of the urethra and attached to the symphysis pubis, the upper horn of the septum passed in a crescentic manner (with the concavity forwards) across the os uteri, as a distinct band, to the left vaginal fornix. At this point it measured 2½ in. in width. It then engaged the mesial line of the introitus posteriorly, and again becoming fibrous was attached by its lower horn to the centre of the perineal body. A series of varicose veins issued from its mesial attachment, embedded in a fibrous membrane covered on each side with a glossy mucosa. During the birth of the child a slit occurred in the centre of the mesenteric-like band, which was easily dislodged from its obtruding site. The post-partum treatment of the case needs no remark.

Remarks.

The anatomical disposition, no less than the crescentic form of the septum, renders this case worthy of record. The septum would appear to be either (*a*) an outgrowth of the two limbs or laminæ—in the process of development of the vagina—at the point of coalescence in the postero-mesial line; or (*b*) an attempt at subdivision of the canal in forming a duplex vagina (as in a Didelphian type); or (*c*) a failure in obliteration of the Müllerian canal, which at a late embryonic stage is double, so leaving a septal outgrowth or division after sending down the process that went to form the hymen.[4]

West Ealing, W.

[1] Cullingworth: THE LANCET, 1889, 1, 726.
[2] Anomalies and Curiosities of Medical Literature, Gould and Pyle, p. 397.
[3] Boston Med. and Surgical Journal, 1895.
[4] Minot's Human Embryology, 1899, p. 506.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

EXHIBITION OF SPECIMENS OF SECONDARY DEPOSITS IN BONE MISTAKEN FOR PRIMARY TUMOURS.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 5th, Sir JOHN BLAND-SUTTON, the President, being in the chair, when a discussion took place on Secondary Deposits in Bone Mistaken for Primary Tumours. Illustrative specimens were exhibited.

The PRESIDENT, who opened the discussion, said that when secondary carcinoma grew in an organ not easily accessible to putrefactive micro-organisms the deposit might become big before attracting attention. This phenomenon had been particularly observed in connexion with the ovary. Large solid and semi-solid ovarian tumours had been removed under the impression that they were primary. The histology of such tumours had proved that the primary tumours arose in the breast, gall-bladder, or gastro-intestinal tract, and the subsequent history of such patients had confirmed the histological findings. This was equally true of bones. Portions of long bones had been removed and limbs had been amputated for tumours regarded as primary, but the tumour-tissue had contained epithelial elements. It was established that epithelial tumours did not arise primarily in bone. Forty years ago the attention of surgeons was drawn to the occurrence of tumours in bone, regarded as primary, but which contained epithelium, in shape and arrangement, resembling the lining of the vesicles of the thyroid gland. Many examples had been recorded in which such tumours had been discovered and removed, or recorded in the belief that they were primary; but after a minute examination of the structure of the tumour the surgeon had re-examined the patient and found an enlarged thyroid body. He related the case of a woman who had a tumour of the skull which was found, microscopically, to have the characters of thyroid gland substance. The patient's thyroid gland was enlarged. In recent years some remarkable bone tumours had been observed (and removed) in bones which, when examined, had been found to resemble the zona fasciculata of the adrenal. Subsequently a tumour of similar structure had been found in the kidney or in the adrenal. This matter was of clinical and pathological importance and well worthy the consideration of surgeons.

A Case Described.

The President described a case which was recorded in full at the opening meeting of the session in 1918. It was that of a doctor, aged 45, who had a swelling in the lower part of the right humerus. Clinically it furnished the usual signs of a myeloma and was excised under this impression. Two years later it recurred in the stump of the bone; this was excised with two inches of the humeral shaft. The patient remained well for five years and died suddenly in hospital. After death, a tumour was found in each adrenal and in the right kidney. The tumours in the humerus, in the adrenals, and in the kidney were so destroyed by extravasation of blood that the structure of the tumour could not be satisfactorily determined, but a solid secondary nodule in the heart, in shape and size like a nut, showed the characteristic structure of the zona fasciculata of the adrenal. On these facts the speaker had come to the conclusion that this was an example of the dissemination of an adrenal tumour, but Professor Shaw Dunn, who examined the specimens, believed that the primary tumour arose in the kidney and was a hypernephroma.

The chief lesson to be drawn from the narrative was this: A man had a tumour in the right kidney which had run such a chronic course that no one suspected its existence, although a secondary deposit in the right humerus had become large enough to be clinically obstrusive and mimic a myeloma. After removal of the secondary tumour the patient lived in comfort and usefulness for five years. It also illustrated what he had often tried to emphasise, that cancer per se was an extremely chronic disease until it became septic; then misery attended until life was extinguished by a terminal infection.

Tumour of the Clavicle.

Mr. V. WARREN LOW showed the skiagram of a Tumour of the Clavicle.

The patient, a man of 55 years, was admitted to hospital for a lump on the right clavicle. About eight weeks before admission he "ricked" his shoulder while practising physical exercises. In order to ease the slight pain which followed he rubbed his shoulder with some liniment, and while doing this, about a fortnight after the accident, he first noticed the lump. The latter was not painful and caused him little inconvenience. On admission to hospital there was a hard, somewhat lobulated swelling on the right clavicle at the junction of the outer and middle thirds. The swelling was not attached to the skin and appeared to embrace the shaft of the bone. An X ray photograph showed that there had been a fracture, and that the broken ends of the bone, which slightly overlapped, were enveloped within a mass of growth. Although a Wassermann reaction was negative antisyphilitic treatment was adopted for a short time with what appeared at first to be some benefit. It was soon apparent that there was no real diminution of the swelling and it was decided to explore. The tumour was exposed and found to be a definitely bony swelling of the clavicle. There was no evidence of anything like growth on the surface. The compact tissue, which was certainly not thinned, was gouged through and a cavity was exposed containing some soft yellowish material not unlike what one would expect to find in a gumma. This was contained in a smooth-walled cavity in the bone from which the bleeding was profuse, and could only be stopped by filling the entire cavity with wax. Some of this soft material was examined by Dr. B. H. Spilsbury, who pronounced it to be carcinoma. There was no definite evidence of any primary growth and the clavicle was removed, recovery being uneventful. There was no evidence of carcinoma in his prostate, intestine, or mammæ, nor was there any swelling of the thyroid, and it was supposed that this was a case of bone tumour secondary to an adrenal growth. There was no direct evidence of this as the kidney regions appeared normal. It was ascertained that the man had afterwards died, but no particulars could be discovered. Dr. Spilsbury, in his report, said that the sections showed a malignant growth having the characters of a carcinoma and resembling a hypernephroma.

Errors in Diagnosis.

Mr. CYRIL NITCH reported two cases, which he described as examples of errors in diagnosis, resulting from absence of any symptoms which would have led to recognition of the primary growth.

The first occurred in a man, aged 52, with a swelling below the right elbow of two years' duration. This was causing great pain and had increased rapidly in size during the last three months. Immediately below the olecranon process there was a soft, fluctuating, fusiform swelling, 3 inches long and 2 inches wide, involving the upper third of the ulna, and invading the elbow-joint. A skiagram showed destruction of the coronoid process and practically the whole of the upper third of the ulna, only a thin shell of bone being left over the back of the tumour. Owing to the long history and the severe pain the lesion was thought to be due to tubercle. On cutting into the swelling it was found to be a soft, highly vascular, plum-coloured growth, studded with sulphur-coloured nodules. Above it was encapsuled, but below it was infiltrating the muscles. It was widely excised. Dr. L. S. Dudgeon made a microscopical examination and described it as typical of carcinoma of the adrenal cortex. The abdomen was then examined and a nodular tumour was found in the right loin. Shortly after the operation a soft pulsating nodule was discovered on the ninth rib. The growth in the arm recurred, and was now as large as at the time of operation six months ago. Until three weeks ago, when the patient had had a severe attack of hæmaturia, there had been no symptoms suggestive of the existence of the primary growth.

The second case was that of a female with a large globular swelling of the upper end of the right humerus and another in the body of the left scapula. These were thought to be sarcoma, and their real nature was not recognised until after a microscopical examination had been made of a portion of tumour removed for the purpose. It was then discovered that the growths were secondary to an adrenal carcinoma, which up to that time had given no signs of its existence.

Upper Extremity of Right Humerus Replaced by Growth.

Mr. E. K. MARTIN showed a specimen of the upper extremity of the right humerus completely replaced by growth, with fracture of the surgical neck.

The patient was a woman aged 52. For 12 months she had had numbness in the right arm, for nine months the limb had been painful, for five months there had been loss of power, and for two months swelling of the shoulder. On admission to hospital there was swelling about the anterior and outer aspects of the shoulder as low as the deltoid insertion. The skin was slightly reddened and the superficial veins were dilated. Sarcoma was diagnosed, and the limb amputated through the shoulder. Microscopical examination showed the presence of secondary carcinoma. Search for the primary growth revealed an extensive carcinoma of the cervix. The patient died six months later.

Mr. MARTIN also showed a specimen of the upper part of the left femur of a man aged 65, with a lobulated tumour projecting from the lower aspect of the neck and adjacent part of the shaft, the bone being expanded posteriorly.

The man had had pain in the left hip and thigh for six months and swelling for two months. The condition was thought to be sarcoma, and amputation at the hip was performed. There was a central deposit in the trochanter, neck, and head. Microscopically there was a delicate connective tissue stroma enclosing large alveoli, most of which were filled with spheroidal cells. In some alveoli the cells tended to assume a cubicle shape. There was no evidence of the position of the primary growth. Death occurred shortly after operation, and there was no post-mortem examination.

Carcinoma of the Ileum.

Mr. CLAYTON GREEN recorded a case of Carcinoma of the Ilium.

The patient was a woman aged about 56. Her first complaint was that of pain, thought to be rheumatic, along the course of the external cutaneous nerve of the thigh. Later a swelling of the ilium developed. She had always been constipated, but there was no definite evidence of intestinal trouble. The tumour was explored. It was very necrotic, and there had been extensive hæmorrhage in it. A section of a portion removed showed it to be a columnar-celled carcinoma. Radium was inserted into the tumour at the end of April, 1919. The wound had now healed and the tumour had not increased in size. There were still no intestinal symptoms.

The subject was discussed and illustrative cases were described by Sir CHARLES BALLANCE, Sir HUMPHRY ROLLESTON, Mr. G. D. NICHOLSON, Mr. CECIL ROWNTREE, and Mr. DOUGLAS DREW.

SECTION OF OPHTHALMOLOGY.

EXHIBITION OF CASES.

THIS section of the Royal Society of Medicine held its first meeting of the session on Nov. 5th under the presidency of Mr. W. T. HOLMES SPICER.

Acute Disseminated Choroido-retinitis.

Dr. RAYNER D. BATTEN showed a case of Acute Disseminated Choroido-retinitis of doubtful origin. The changes all took place practically while the patient was under observation. He was first seen by the exhibitor at the end of March last. Three weeks previously to returning home demobilised he had lost central vision in the right eye. A nearly flat subretinal patch was found to the temporal side of the optic disc below the superior branch of the retinal vessel. It was about one-third the size of the disc and was triangular in shape. A small retinal vessel passed over it and it was surrounded by an area of œdema. The remainder of the right fundus and the whole of the left fundus were normal. The eye was examined about once a week. Towards the end of May the whole of the right fundus was thickly strewn with patches of choroiditis, and these could still be seen in much the same condition. The central patch had now subsided and the vision had improved. As the appearance was strongly suggestive of syphilitic choroiditis, a Wassermann test was twice done, but was negative; there was no evidence of that disease about the man, and he strongly denied the possibility of such infection. In December, 1916, when on military service, he had a wound on the foot which was very tardy in healing. The area of the wound was still tender to pressure. A surgeon had declined to open up the foot again on account of the stubborn healing on the former occasion. In August last the vision was: Right, 6/18; left, 6/6. When seen on Oct. 2nd there was a history of sudden failure of vision in the left eye three weeks previously, with a central black spot. Later a similar condition was found in the right eye, the vision in that eye being 6/9, the vision in the left having been reduced to 6/36. He asked opinions as to the likelihood of further attacks, and as to the probable causal agent.

The PRESIDENT thought the involved area was raised above the general level of the fundus, and his view was that the cause was sepsis, from the original focus in the foot.

Optical Nerve Tumour.

Major J. F. CARRUTHERS, R.A.M.C., showed an unusual case of Optic Nerve Tumour. The patient, 21 years of age, was not aware of anything wrong with his vision until he was 14. His attention was drawn to his sight, however, by increasing dimness of vision. As his other eye was good, however—it was still 6/6—he paid no attention to the matter. He later had dragging pain at the back of the eye, and last June he attended the Herbert Hospital for treatment. A consultation was held, and operative measures were discouraged. The man returned to work, but came again in July, and then the eye was found to be quite blind, and the pupil did not react to either light or accommodation, only consensually with the other. The pain he (the speaker) did not attach much importance to, as it did not seem to deter from sleep or enjoyment. There had been no injection of the conjunctiva and the media were clear. In July there was a pearly-white organised mass covering the whole anterior surface of the optic nerve; no hæmorrhages nor even vessels were apparent in or on it. There appeared to be a retino-choroidal rupture, and the structures inside a pigmented ring were evidently being drawn towards the under surface of the tumour. There was very little sign of progress since July.

Mr. HUGH THOMPSON, who saw the case in June, thought it was probably a birth injury to the nerve—a view in which several colleagues agreed. With the exception of a little more pigmentary disturbance he saw no evidence of advance.

Mr. M. S. MAYOU suggested the possibility of the tumour being tubercular, and asked whether the man had been investigated from that point of view.

Mr. LESLIE PATON referred to a similar case, though of less degree, which he showed before the Ophthalmological Society ten years ago. In that patient there was no sign of rupture of the choroid. The discussion on it showed that most members considered it a congenital malformation in the connective tissue of the disc. The question whether or not this growth was progressing was an important one in considering whether the eye should be removed.

Colonel J. H. PARSONS said Mr. Paton's case was one in which there was a little mass at the edge of the disc. There was no absolute proof that the lesion was a growth. The eye was excised. The section gave an appearance exactly similar to Coats's disease, exudative retinitis; it was in a very early stage. He thought it very likely that the present case was one of birth injury at the head of the nerve, with subsequent cicatrisation.

Mr. TREACHER COLLINS suggested that there had been some hæmorrhage into the vitreous, and that the white mass in front of the vitreous was organised fibrous tissue.

Major CARRUTHERS replied that no tubercular or other disease was found at the medical examination, and the urine was normal.

Mr. H. R. JEREMY and Mr. W. H. MCMULLEN showed cases of Supposed Avulsion of the Optic Nerve Head.—Mr. MALCOLM HEPBURN did not agree with the description.

Bilateral Changes in the Macula.

Colonel PARSONS exhibited a case showing Bilateral Changes in the Macula. When the young man's mixed astigmatism was corrected his vision was practically normal. He entered the army unaware of any optical defect, and remained three years, until he was examined again before leaving for Egypt with a draft. Then Mr. Secker Walker, of Leeds, finding the macular changes, quite rightly secured his release. The changes were of long standing, and he thought it likely they were caused by colloid bodies in the choroid. These bodies were usually found in elderly people, but they were seen in young subjects of retinitis pigmentosa.

Mr. TREACHER COLLINS thought the condition was probably retinitis circinata—i.e., hæmorrhages into the retina itself, organising into white masses. The white patches round the disc seemed to be too extensive for ordinary colloid degeneration.

The PRESIDENT took the same view of the case as that expressed by Colonel Parsons. In retinitis circinata there was, he believed, always some loss of vision, and generally the macula was very grey in appearance, what had been well described as a "Passover-bread appearance"—white masses with black holes in them.

Result of a Plastic Operation.

Mr. R. R. CRUISE showed a patient six months after a plastic and grafting operation on a damaged socket for the purpose of wearing an artificial eye. It showed either that the conjunctiva had encroached at the expense of the skin, or the graft itself had been so altered by the constant orbital moisture as to approximate to conjunctiva. He re-emphasised the points he made when showing the case before the Ophthalmological Society six months ago.

The PRESIDENT expressed the congratulations of the Section to Mr. Cruise on his skill.

Mr. SIMPSON showed a case of probable Partial Avulsion of the Optic Nerve.

Dr. RAYNER BATTEN'S paper on the Need of Ophthalmic Physicians for the Advancement of Ophthalmology was then read. The discussion on it was postponed.

SECTION OF NEUROLOGY.

SOME LESSONS OF THE WAR APPLIED TO SPINAL SURGERY.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 13th, Dr. W. ALDREN TURNER, the President, being in the chair.

Mr. PERCY SARGENT read a paper on Some Lessons of the War applied to Spinal Surgery. In some respects, he said, gunshot injuries of the spine differed from those usually met with in civil practice. The primary outstanding difference was that of wound infection. The gunshot wound was invariably compound, whilst the fracture-dislocation was not. The majority of wounds in which the cord was directly or indirectly implicated did not lend themselves to early radical excision. Whether or not a patient with a gunshot injury of the spine died of meningitis depended almost wholly upon whether or not the dura mater had been torn, and under no circumstances was it justifiable to open the intact theca, in the presence of a septic wound, in order to ascertain the state of its contents. It became evident in the earliest days that the escape of cerebro-spinal fluid almost certainly meant death from meningitis unless the leak could be stopped, and this, in an otherwise favourable case, he always regarded as one of the few definite indications for early operation. In many cases the theca had been punctured by a fragment of bone which, remaining in situ, plugged the hole which it had made, and prevented both the escape of cerebro-spinal fluid and the ingress of micro-organisms. An operation which uncorked the theca in the presence of a septic wound enormously decreased the chances of recovery. Mild infections of the spinal membranes from which the patient recovered might produce intrathecal adhesions, such as gave rise later to that loculation of cerebro-spinal fluid which so closely resembled the meningitis circumscripta serosa described by Horsley.

The second outstanding difference concerned the manner in which the cord was damaged. Most of the injuries of civil life were produced either by the massive displacement of one part of the vertebral column upon another, or by a crushing fracture of the vertebral bodies, whereby part of the comminuted bone was squeezed backwards so as to contuse and compress the cord. Momentary displacements of the two vertebræ upon one another, with immediate rebound, might also injure the cord. In any case the damage was most commonly produced by direct violence, and the result might vary from a slight contusion up to a complete shearing across of the cord. The cases of gunshot injury comparable with these were those in which a spent bullet or shrapnel ball, impinging upon some part of the spine, entered the vertebral canal, driving fragments of bone before it. But when a missile of high velocity struck some part of a vertebra without entering, or directly violating the contents of, the vertebral canal, effects were commonly produced which were less often seen in the spinal injuries of civil life. The resulting changes in the cord were usually described as concussion phenomena, and the lesions varied from transient œdema up to total disintegration of the cord at the point of maximum intensity. Momentary or very short-lived loss of function had been observed many times, not only from actual hits, but also as the result of the bursting of a high-explosive shell close to the patient.

Morbid Anatomy.

After referring to the description of morbid anatomy and histology of the damaged spinal cord which was given by Dr. Gordon Holmes in his Goulstonian lectures (1915), Mr. Sargent said that in the light of these observations the pre-war conception of hæmatomyelia needed revision. Minute hæmorrhages were present in every cord which had

been at all severely damaged and were relatively unimportant, but in fracture-dislocation hæmorrhages of any size were very rare. Similarly, whilst a slight extra-medullary and extra-thecal hæmorrhage was commonly met with in recent examples of gunshot wounds, a hæmorrhage of sufficient extent to cause symptoms of compression was rarely encountered. On the other hand, a small amount of effused blood within the theca might perhaps give rise later to adhesions and loculation of the cerebro-spinal fluid. Although the functions of the damaged cord could only be re-established to the extent to which the nervous elements had not been actually destroyed, the cord was so "overwired," as Dr. Henry Head expressed it, that quite a gross amount of destruction was not incompatible with a useful degree of recovery. All that surgery could do was to place the injured cord in the conditions most favourable for recovery by removing, as thoroughly as was practicable, any actual or potential cause of compression.

1. *Conditions found at an early date in gunshot injuries.*—Cases selected for laminectomy within a few days of the wounding were those which were considered suitable as judged by the following criteria: (1) absence of serious concomitant injury, such as hæmothorax; (2) leakage of cerebro-spinal fluid from the wound; (3) radiographic evidence of the presence of a missile or fragments of bone within the spinal canal; (4) some evidence, however slight, that the conductivity of the cord was not wholly abolished. To this list might perhaps be added pain, though the necessity for surgical intervention on the ground of pain alone was much rarer than the text-books would lead one to suppose. The first 24 cases subjected to early operation two to ten days after being wounded could be grouped according to the gross anatomical features which they represented into (1) (9 cases) those with a missile and bony fragments within and narrowing the spinal canal, but without laceration of the dura; (2) (6 cases) those similar to the foregoing but with leakage of cerebro-spinal fluid; (3) (5 cases) those with a missile within the theca mostly with gross destruction of cord and all with leakage of fluid; (4) (4 cases) those in which no evidence of injury could be seen within the spinal canal. In such cases the injury to the cord, whatever its degree, represented a pure concussion effect. Of these 24, 16 were followed for periods of from 12 months to four years. Only 8 showed any considerable degree of recovery; 2 were in statu quo and 6 were dead. Of the 8 definitely improved, neurologically speaking, only 4 could walk, but in all of them partial or complete voluntary vesical control had been regained. All but one had a piece of metal and bony fragments removed from the spinal canal, whilst in four cases cerebro-spinal fluid was leaking from the wound.

(2) *Conditions found at a later date in gunshot injuries* included; dense scar-tissue, often with bony fragments embedded in it, adherent to the cord or to the nerves of the cauda equina, the scar, perhaps, forming a veritable annular stricture; definite cystic loculation of cerebro-spinal fluid; a pale and shrunken cord or intramedullary cyst; partial or complete division of the spinal cord, and fragments of bone, and even metal embedded in it.

(3) *Conditions found at early operation in fracture-dislocation.*—Within 24 hours of the accident the unruptured theca was tightly stretched over an anterior bony prominence and devoid of pulsation below that point. In all cases the salience of the bony projection was reduced by traction upon the spine and manipulation, whilst the theca and its contents were carefully protected from further injury. After a short time such reduction was no longer possible and the salient ridge would have to be chiselled away, or two or three laminal arches both above and below the site of the dislocation might be removed, as this tended to straighten out the theca.

(4) *Conditions found at late operations in fracture-dislocation.*—In addition to the above, the lumen of the spinal canal might be still further encroached upon by callus; scarring of the membranes might constrict the cord or cauda equina, and meningitis circumscripta serosa was commonly present. In one case, four months after the accident, a pale, soft, swollen cord was found pressed against the dura mater by a definite cystic collection of cerebro-spinal fluid situated in front of it.

The conclusion to be drawn was that some of the extra-medullary causes which militated against recovery could be eliminated, or at least minimised, by early operation, and that at a later date conditions might exist which retarded recovery, but which were capable of being removed by operation. Early exploratory operation should, perhaps, be more often undertaken in cases where there was no septic wound to contra-indicate it. The experiences of the war had shown that there was no sign or group of signs by which a complete lesion could be diagnosed with precision in its earliest stages. The early appearance of a defence reflex from the soles and the presence of an extensor reflex in the great toe might be taken as favourable indications. He advocated exploratory laminectomy so as to secure a full and complete exposure of the spinal contents for some distance above and below as well as at the site of injury. In the hands of those familiar with the operation he considered the risks to be small and the dangers to have been exaggerated.

Cystitis.

No amount of care would either wholly prevent or cure cystitis in the absence of return of vesical function. If neither voluntary nor reflex function could be restored the patient would sooner or later inevitably succumb to pyelonephritis. Until vesical function returned every precaution must be taken against infection, and over-distension of the bladder ought to be avoided. Over-distension probably played a part in allowing kidney infection, and recovery of function was delayed in the atonic bladder which resulted from over-distension. Head and Riddoch emphasised the fact that toxæmia inhibited the reflex activity of the spinal cord. Absorption through the wall of any pus-containing cavity was accelerated when the contents were under pressure, and in this way also over-distension of the bladder would retard recovery. Once the activity of the vesical reflex arc had begun (according to Head and Riddoch, about the third week after the spinal injury) the automatic action of the bladder could be established by methods which these authors had described in detail. The amount of fluid constituting the adequate stimulus for detrusor action is determined for each individual case; twice a day this quantity is poured into the bladder until the reflex is evoked. The evacuation can be facilitated by such means as deep breathing, hypogastric pressure, and by any cutaneous or other stimulus capable of evoking a flexor spasm of the legs. The re-education of the bladder was, he said, one of the most important of all the lessons learnt from the study of gunshot wounds of the spine, and should prove of inestimable value in the treatment of those cases of spinal injury which were met with in civil practice, as well as in the management of many cases of paraplegia resulting from diseases of the cord.

Bedsores.

The work of Head and Riddoch had emphasised the importance of bedsores and pointed out their real significance. If the bedsore killed it did so most frequently by way of the kidneys, for it formed a link in a fatal sequence of events—namely, bedsore, toxæmia, depression of spinal activity, cystitis, and pyelonephritis. Besides, healing depended largely upon the recovery of the reflex functions of the cord, which were inhibited by the action of circulating toxin absorbed from the bedsore. It was during the period of spinal shock that the skin was most vulnerable, and it was therefore in the earliest stages that the greatest precautions should be taken.

Paralysed Limbs.

The spinal injuries of the war had provided ample material for determining the signs whereby complete and incomplete lesions of the cord might be distinguished from one another. (See Riddoch's paper in *Brain*, vol. xl.) From the purely practical point of view it was important to be able to ascertain not merely whether any minimal conduction persisted through the damaged segments, but whether enough useful cord remained undestroyed to allow of a useful degree of recovery in the limbs. Many paretic patients who could produce quite good voluntary contractions of the muscles were totally unable to put the legs to their primary and fundamental use as organs of locomotion.

When any considerable degree of recovery had taken place in an injured cord the usefulness of the legs might be impaired, not only to the extent to which sensory and motor paths had been permanently cut, but by other causes as well The accessory causes, which in varying degree

contributed to the disability, and which were largely remediable, were:—

1. Inability to make proper and coördinated use of the recovered neuro-muscular mechanism, a power which could be restored by properly directed methods of re-education.

2. *Hysteria.*—The fact of getting a paraplegic patient out of bed and into a chair might have a strong psychical effect; the gradual systematic re-education of movements which had long been lost interested and encouraged him, and every improvement brought about by these and other means was a powerful stimulus to further effort. The swimming bath had been of incalculable value. Patients who on dry land could perhaps just stand with support, but who could make no movement of progression, were sometimes able to walk almost unaided in the bath at their very first attempt.

3. *Deformities.*—A third cause of disablement in a recovering case was furnished by deformities due to neglect. Deformities should never be allowed to develop, but when established their correction by orthopædic measures constituted an essential preliminary step in treatment.

4. *Spasticity.*—Spasticity should be regarded from two aspects; firstly, as it affected those with total transverse lesions, or with lesions so severe as to preclude any possibility of recovery of function in the lower limbs; and, secondly, in those who possessed, or were on the way to regain, what would otherwise be a useful degree of voluntary power. Spasticity not only concealed and rendered useless any voluntary power that might exist, but the spasms were often so disturbing to the patient as to tell seriously on his health. Further, the constant friction against the bedclothes damaged the skin and caused bedsores, particularly in those cases where the cord lesion was so situated that outbursts of sweating accompanied the flexor spasms, whilst splinting for the prevention of deformities was rendered excessively difficult. If we regarded the spasticity as the manifestation of excessive and uncontrolled reflex action, we might either attack the afferent or the efferent side of the reflex arc; or else we might deal with the mechanical rather than with the neural aspect. To take the mechanical aspect first, by dividing the attachments of muscles, their effective action might be, temporarily at least, abolished or modified; by transplanting the spastic hamstrings into the quadriceps tendon their energy could be utilised for correcting the very deformity which they would otherwise produce. We might also diminish the afferent impulses which evoked reflex action by avoiding rough handling and every other sudden and strong impulse, especially massage and electricity; or we might divide some of the posterior nerve roots passing to the affected segments by the operation suggested by Professor Foerster for the spastic diplegia of cerebral origin. Mr. Sargent said that he exposed the conus medullaris and upper part of the cauda equina by removing the neural arches of the last two thoracic and first two lumbar vertebræ, and then divided alternate bundles of the lumbar and sacral posterior roots to the extent of about two-thirds of their total bulk, the actual number divided depending upon the degree of spasticity which it was desired to overcome. In cases of complete division of the cord, or with such a severe lesion as to render any useful degree of recovery impossible, he divided the anterior roots as well. Possibly in such cases, in order to preserve the power of facilitating automatic action of the bladder, it would be better to divide anterior roots alone. A useful minor operation for the temporary relief of spasticity, when it chiefly affected the adductor muscles, was to expose and crush the obturator nerves. In the hopeless cases these nerves should be divided so as to produce permanent paralysis.

Discussion.

Mr. A. J. WALTON said that there was a marked amount of destruction even when the bullet had never entered the dura, and this was due to the momentum of the body causing the injury, and not by pressure on the cord. There was no immediate urgency in removing pieces of bone or bullet lying in contact with the cord as the damage was done at the time of injury.

Dr. HENRY HEAD said that there were certain criteria by which it was possible to tell that the cord was not divided. If in three months the patient had definite extensor spasms, if jamming up the sole of the foot caused an extensor response, then the cord was not divided. The first stage which the patient went through was the stage of shock; there were no reflexes, there was no bladder action, and no motor or sensory activity. During the second stage there was return of reflexes and automatic action of the bladder. If in the third stage there was a return of extensor spasms and response to stimuli the cord might be said not to be divided. He pleaded for hope in these cases. In the large majority if the patients remained in a condition of helplessness for more than two months, exploration should be carried out. Signs of extensor spasm and a response to stimuli should be looked for specially and repeatedly. Many patients whom he had seen were regarded as hopelessly paralysed, although they had had extensor spasms and should be got up. If the cord was divided the bladder should be got into condition and the bedsores cured; the patient might then live a very comfortable chair life.

The CHAIRMAN, Sir J. CHARTERS SYMONDS, Mr. DONALD ARMOUR, Dr. G. RIDDOCH, Dr. J. COLLIER, Dr. E. FARQUHAR BUZZARD, and Mr. BLUNDELL BANKART also took part in the discussion, and Mr. SARGENT briefly replied.

SECTION OF PSYCHIATRY.

THE PATHOLOGY OF DEMENTIA PRÆCOX.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 11th. Dr. WILLIAM MCDOUGALL, the President, referred to the loss which the section had sustained through the death of Dr. Mercier. A resolution of condolence with the relatives was passed.

Sir FREDERICK MOTT then read a paper on the Pathology of Dementia Præcox or, as he himself preferred to entitle it, some studies in this branch of pathology. He referred to the work of Kraepelin, and noted that in the recent translation of the latter's book no certainty was claimed in our knowledge of the pathology of this disease.

Atrophy of the Testis in Dementia Præcox.

An interesting observation in connexion with the pathology of dementia præcox was the frequency with which retrogressive atrophic changes occurred in the testes. In his experience these changes were found in more than half the cases. In cases of general paralysis, on the other hand, he had not found a case in which spermatogenesis had ceased before the time of death. Slides were projected on the screen showing the degenerative changes in dementia præcox cases—the absence of spermatogenesis and the thickened basement membranes. These pictures were contrasted with slides from preparations taken from the testes of octogenarians, the latter showing a markedly less degree of atrophy.

Degenerative Changes in the Brain.

The brain of the dementia præcox case might well pass for a normal organ on examination by the naked eye. Certain important changes were, however, found by staining sections. These changes, occurring in the nuclei of the neurone, were stated by Kraepelin to occur in the frontal region, but Sir Frederick Mott had found that the basal ganglia and pons were also affected.

The passage of the nerve impulse was dealt with in detail, the speaker describing the passage through the axon as a physical process analogous to the passage of an electric current along a copper wire. This was shown by the fact that fatigue did not occur in the axon but at the synapse, nor was carbon dioxide found even after the nerve had been tetanised, except in such small quantities that the cells of the nerve sheath rather than the axon itself were to be held responsible for its production. The stimulus at the nucleus was chemical, atomic oxygen being released by the action of a catalase upon an oxidase. It was this latter action which in dementia præcox was suppressed. Sections of grey matter from cases of dementia præcox compared with similar sections from a case of tetanus showed far less absorption of the basic dye, proving a diminution in the essential basichromatin substance which was also lacking in the atrophic testes of these patients. At the same time the nucleoli took on a red or purple stain, showing an excess of oxychromatin matter.

Discussion.

In reply to the PRESIDENT, Sir FREDERICK MOTT stated that similar retrogressive changes were found in the ovaries to those described in the testes. He was satisfied that the changes he had found were sufficient to account for the

symptoms of dementia præcox, that they were primary causes of the disease and not secondary to any psychical factor.

Sir ROBERT ARMSTRONG-JONES championed the idealist theory against the materialist. He had not found treatment with adrenalin, spermine, or thyroid extract effective, whereas galvanic stimulation of the cortex had given more encouraging results.—Dr. H. J. NORMAN supported the "material" view.—After some interchange of definition for the word "psychogenesis" the discussion came to an end.

MEDICAL SOCIETY OF LONDON.

EXHIBITION OF CLINICAL CASES.

A MEETING of this society was held on Nov. 10th, Mr. V. WARREN LOW, the President, being in the chair, when an exhibition of clinical cases took place, amongst them being included the following:—

Mr. V. Z. COPE showed a man who had had a Baghdad Boil (Leishmaniasis) of the Lip. After many forms of treatment had been tried, healing had followed rapidly after intravenous injection of antimony, and very slight scarring had been left.

Cases for Diagnosis.

Dr. F. J. POYNTON showed two cases for diagnosis.

The first was that of a man, aged 34, who had been admitted to hospital in October, 1919, with symptoms of 14 months' duration. During this time he had complained of loss of feeling in the left side of the body, particularly the arm, numbness of the fingers spreading up the left arm, and hiccough after meals. The last symptom had gradually got worse until the attacks lasted continuously for from five to six days, both when he was asleep and awake. During these attacks he could not eat any solid food, and micturition was very frequent, sometimes three times during the hour. The patient made no movements of his left arm, which he kept flexed. There was a suspicion of spasticity about his left leg. The muscles corresponding to the fourth, fifth, and sixth cervical segments were wasted, and in some there was fibrillation. All the forearm muscles were slightly wasted, but more so on the left side. There was some wasting of the interossei. The diaphragm moved fairly well. There was no muscle tenderness. Biceps and supinator jerks were absent on both sides; the knee-jerks were present, the left being slightly increased. Abdominal reflexes were absent. The plantar response on the left side was usually extensor when first examined; that on the right, flexor. The maximum area of loss of sensation corresponded to the fifth to eighth cervical segments and the first and second dorsal. Over the hand and radial side of the forearm there was complete loss of sensation to touch, pain, and temperature. The Wassermann reaction was negative, and lumbar puncture gave a clear fluid. There was no reaction of degeneration.

Dr. Poynton raised the question of the importance of fibrillary tremor as a diagnostic sign of progressive muscular atrophy and asked whether the presence of sensory changes should exclude that condition as there seemed to be some difference of opinion among neurologists.—Dr. F. S. LANGMEAD held that fibrillary tremor was of little value as a means of distinguishing progressive muscular atrophy from other systemic diseases associated with wasting of muscles.—Dr. A. FEILING was of the same opinion and thought that the sensory changes were very strong evidence against a diagnosis of progressive muscular atrophy.

The second case was that of a girl, aged 10 years, with paralysis of the right arm and leg, weakness of the left arm and leg, and some alteration in speech. The onset was abrupt and occurred at the end of July this year. She complained of pain in her right arm and the pain persisted for two days. On the third day the mother noticed that the arm hung limp and powerless. The child was in good general health but rather fretful. About a week later it was noticed that she was limping and began to lose the power of her right leg. Soon afterwards the speech became slow and deliberate and then was lost altogether. At about the same time she began to lose the power of her left arm and leg, and the mother noticed that her mouth was pulled to the right side. She was now confined to bed, and her right arm became rigid and contracted and remained so. For the first four weeks in bed the child was unable to move her limbs except for slight movements at the knee-joints, and there was also incontinence of urine. She had regained partial use of her arm and leg before admission to hospital, and speech had commenced to return. The bladder control had also been regained. There was no history of unconsciousness, feverishness, headache, or vomiting. There was no reaction of degeneration and no impairment of sensation. Knee-jerks and tendo Achillis jerks were active and arm reflexes were exaggerated on both sides. The right arm was rigid and resisted passive movements. Attempts to move the arm caused the hand to go into a coarse tremor. The movement in the right leg was one of extension. Like the right arm, it was rigid and resistant. In the left leg all muscular movements could be carried out but were weak and slow. The affection of the left arm was particular. All movements were retained except hyperextension of wrist joints, but they were wildly incoördinated. There was no athetosis.

The condition had improved during treatment in hospital. The diagnosis suggested was polio-encephalitis affecting the mid-brain. There was, however, a marked functional element present.

Pituitary Tumour: Dyspituitarism.—Huntington's Chorea (?).

Dr. FEILING showed a case of Pituitary Tumour: Dyspituitarism.

The patient, aged 40, a railway signalman, noticed in March, 1919, that he "could not see things immediately to the side of the object he was looking at," but could see objects to the extreme right and left. There was no headache or vomiting. Some polyuria was present, and he had been subject to "bilious attacks," which had occurred about once a month for the last five years. He had been gaining weight for the last ten years; his hair had been falling out for two years. There had been loss of sexual desire for ten years. Examination showed marked obesity, the patient exhibiting somewhat female contours. His weight was 13 st. 7 lb. (at age of 25 he weighed 10 st. 4 lb.). The hair was falling from the scalp; the pubic and axillary hair were normally developed. The skin was dry and harsh; the mammary glands were well developed. The blood pressure equalled 125 mm. Hg. The heart and lungs were healthy. The urine was normal in amount, and there was no albumin or sugar. Carbohydrate tolerance was being tested, but he had passed no sugar after ingestion of 100 g. of pure dextrose. No signs of disease were found in the central nervous system except in the visual fields, which showed a paracentral scotoma in each eye, absolute in the right and relative in the left. The Wassermann reaction was negative in the blood and the cerebro-spinal fluid.

A skiagram by Dr. GILBERT SCOTT showed well-marked enlargement of the sella turcica with destruction of both clinoid processes.

Dr. FEILING also showed a case of Chorea, (?) Huntington's chorea.

The patient was a married woman, aged 49. There was no family history of any similar disease. The present illness dated from 1910, when she tripped in the street and was found unconscious. On getting about again a fortnight later she found that the right hand had begun to "twitch." All movements since then had gradually become worse. Present condition: There were now choreiform movements affecting the head, face, tongue, jaws, upper limbs, and slightly the lower limbs. Movements ceased in sleep and during hypnosis, but voluntary muscular actions in hypnosis were accompanied by choreiform movements of the limbs. There were no signs of organic nervous disease.

Multiple Exostosis.

Mr. DONALD ARMOUR showed a case of Multiple Exostosis. The patient was 18 years of age and was operated upon two years ago, when an exostosis was removed from the femur. He was admitted to hospital for acute appendicitis, when numerous exostoses were discovered in different parts of the body.—Mr. T. H. KELLOCK said that absorption of multiple exostoses sometimes occurred when union of the epiphyses took place. On the other hand, they occasionally took on malignant features.

Splenic Anæmia: History of Syphilis.

Dr. REGINALD MILLER showed a case of Splenic Anæmia in a patient in whom there was a history of syphilis.

The patient was a male, aged 37. He had had paratyphoid fever in December, 1916, and stated that there was no enlargement of organs in the abdomen at the end of this illness, but that he had suffered from pain and distension in the upper abdomen, gradually increasing since then. There was no hæmatemesis. When first seen in August, 1919, the liver and spleen were both much enlarged and hard. He had been slightly jaundiced three times while under observation; bile was present in the urine. There was no family history of jaundice. Examination of the blood showed the fragility of the erythrocytes to be normal. Average counts: Red blood corpuscles, 4 to 4½ millions;

hæmoglobin, 70–75 per cent.; colour index, 0·6–0·8; leucocytes 2000 to 3000. After treatment of the spleen by X rays these had risen, on the last occasion, to 3800 with a pyrexial reaction, and the polymorphs were about 50 per cent.; lymphocytes, about 40 per cent. No abnormal cells were seen. The patient had been infected with syphilis in 1903, and was treated for three years with mercurial injections and by the mouth. In December, 1918, the Wassermann reaction was negative. In May, 1919, there was some enlargement of the cervical glands, the Wassermann again being negative. He prescribed for himself and received five injections of galyl (0·4 g.). The negative Wassermann reaction and the leucopenia favoured a diagnosis of splenic anæmia rather than one of syphilitic splenomegaly.

The treatment being employed consisted of iodide and X rays, the possibility of splenectomy being kept in view.

Dr. F. PARKES WEBER thought that the diagnosis was probably one of thrombo-phlebitis of the portal vein, which had also implicated the hepatic vein. He said that any form of chronic enlargement of the spleen might produce leucopenia, for it occurred in the condition under discussion, in chronic malaria, in kala-azar, and in lymphadenoma, when the spleen was particularly affected. The question of splenectomy was of interest, for in cases of thrombosis of the portal vein accompanied by splenomegaly, splenectomy had sometimes given satisfactory results, as it did in splenic anæmia.

Dilatation Aneurysm.

Dr. A. H. GOSSE showed a case of Dilatation Aneurysm in a man, aged 43.

Four months previously the patient first noticed pain in the right side of the chest; a cough developed with some sputum, which was now streaked with blood in the mornings. Dyspnœa had been very marked, especially on exertion, and some dysphagia had recently been complained of. He had had occasional attacks of palpitation, and his appetite and digestion were poor. He stated he had not had syphilis. On examination there was some diffuse pulsation over the upper end of the sternum. There was no bulging in any part of the chest wall. The left border of the heart was obscured by emphysema. The aortic second sound was accentuated and a faint diastolic murmur was present to the left of the sternum. Râles and rhonchi were present over the lungs. There was tracheal tugging. The pulses, which were collapsing in character, were not delayed. The pupils were equal and reacted. The cough was brassy. A satisfactory examination of the larynx had not yet been obtained. The Wassermann reaction was positive. The X ray report stated: "General enlargement of aortic shadow; some encroachment into posterior mediastinum. Pulsating. No positive sacculation." No tubercle bacilli were present in the sputum. The systolic blood pressure was 140 mm. Hg and the diastolic 60 mm.

It was proposed to administer one of the substitutes for salvarsan in the next few days. The aneurysm was of the dilatation type and was an aneurysm of symptoms rather than of signs. The aortic incompetence had developed during the past week. It was probable, therefore, that the incompetence was due rather to stretching of the aortic ring than to disease of the valve segments. The blood in the sputum might be due to the soft granulations which sometimes occurred at the point of compression in the trachea. A polygraph tracing of the two radial arteries taken simultaneously showed no delay of the pulse on the left side. The difference in the systolic and diastolic pressures, which were taken on the left arm, first drew attention to the possibility of aortic incompetence, which was then confirmed by the presence of the diastolic murmur.

THE TUBERCULOSIS SOCIETY.

INTESTINAL TUBERCULOSIS IN CONNEXION WITH PHTHISIS.

AT a meeting of this society, held at the Royal Society of Medicine on Nov. 10th, Dr. H. A. ELLIS read a paper on Intestinal Tuberculosis in Connexion with Phthisis. The question, the speaker said, had been overlooked to a great extent because it was most apparent in the last and hopeless stage of the disease. There was, however, no doubt that symptoms due to intestinal tuberculosis occurred in the earlier stages of phthisis, and had a detrimental effect upon the progress of the case. It was while giving doses of tuberculin by the mouth that he noticed symptoms which pointed to intestinal disease; these consisted of flatulent dyspepsia, inability to take food, specially fat, together with obstinate constipation which, when corrected by aperients, tended to the opposite extreme. There were general tenderness and irritability of the abdomen and pain on deep palpation, most marked at a point to the left and above the umbilicus. The condition was made worse by foodstuffs containing much cellulose. Dr. Ellis considered that these symptoms were due to the formation of tubercles between the mucous and muscular coats of the intestine, which, by coming into contact with Meissner's and Auerbach's plexuses, upset the mechanism of peristalsis. Food was thereby retained longer in the gut and decomposed, giving rise to wind and the signs of intestinal auto-intoxication. Treatment consisted in avoiding foodstuffs containing much cellulose, and in relieving constipation; the latter was best accomplished by giving saline aperients, night and morning, thus preventing food from remaining in the stomach overnight and disturbing sleep. Dr. Ellis said that he first tried tuberculin by the mouth with good results, and later his picric brass preparations in oil. The oral administration of the latter was discontinued because of the indigestion caused, and he commenced to give it in the form of suppositories containing $\frac{1}{8}$ gr. twice weekly. This was followed by signs of reaction when tuberculosis was present, but otherwise had no effect. Pain and some degree of diarrhœa resulted according to the severity of the disease. With repeated doses the reactions tended to become less and less, and the general condition and well-being of the patient at the same time improved, although it was some time before a full diet could be taken. Where diarrhœa was already present the suppositories were found to cause almost uncontrollable looseness, but in mild cases 1/36 gr. was given with success.

Discussion.

Dr. HALLIDAY SUTHERLAND said that he had tried brass paste on six very bad cases of lupus with striking results and thought that there was no doubt that Dr. Ellis's preparation had a definite specific action upon tuberculous tissue.

Dr. A. J. WILLIAMSON thought that many of the symptoms ascribed by Dr. Ellis to intestinal tuberculosis might well be explained by toxæmia due to the disease in the lungs.

Dr. JAMES WATT did not think that the symptoms described could be considered pathognomonic. When cases came into sanatoriums and were rested it was common for atony of the intestine to occur. It was possible that the suppositories acted beneficially by clearing out the lower bowel.

Dr. A. SANDISON compared the symptoms to those put forward by Sir Arbuthnot Lane in his book on "Intestinal Intoxication."

Dr. ELLIS, replying, said that mechanical action would not explain the facts, because in non-tuberculous cases nothing happened, whereas in tuberculous enteritis violent diarrhœa resulted. He did not consider that the symptoms were pathognomonic of the disease, but in conjunction with phthisis they led to a suspicion of the intestinal disease which caused the auto-intoxication.

THE VOCAL THERAPY FUND.—A meeting was held on Nov. 11th, at 47, Portland-place, London, W., when Lieutenant-Colonel Martin Flack, Director of Medical Research, R.A.F., spoke on Breathing Efficiency in Relation to Health, and Miss Bush described Vocal Therapy Methods of Voice and Health Restoration in use at the Maudsley Hospital. Colonel Flack demonstrated the use of the instruments by which the breathing efficiency and resistance to air-pressure of flying men are ascertained. In the course of his address he maintained that a big chest measurement necessarily indicates neither good respiratory capacity nor respiratory efficiency. Nor does a large breathing capacity always predicate flying efficiency; because, explained Colonel Flack, when the tone of the diaphragm and abdominal muscles is lowered, as happens when a man becomes tired or has had a crash, the power of resistance to air-pressure is considerably lessened, a condition demonstrable by a diminished power of breathing out. As regards breathing from the general hygienic point of view, Colonel Flack maintained that the power to fill the chest is not so important as is popularly believed. Too little attention is paid to the supplemental air in which respiratory exchanges take place. The practice of thoroughly emptying the lungs is fully as important as that of filling them. Miss Bush said that 350 cases of dumbness and stammering have been dealt with at the Maudsley Hospital, and the condition of the men was alleviated by a scientific procedure applied in a manner which inspired them with faith and hope. Methodical exercises in breathing and articulation were given, and use was made of the healing influence of music.

Reviews and Notices of Books.

A Manual of Physics. By J. A. CROWTHER, Sc.D., sometime Fellow of St. John's College, Cambridge, Demonstrator in Physics in the Cavendish Laboratory, Cambridge. London: Henry Frowde and Hodder and Stoughton. 1919. Pp. 537. 16*s.*

THIS book, the latest addition to the Oxford Medical Publications, is useful as giving a survey of physics such as is required by medical students.. In covering so wide a field it was inevitable that some parts of the subject should receive inadequate treatment, but this is no excuse for omitting all mention of osmosis, diffusion and electrolytic dissociation, without a knowledge of which progress in physiology is impossible.

The author frequently uses expressions which are inaccurate and misleading. We have, for example, "the principle of the conservation of heat," the "coefficient of expansion of a gas at constant volume." The latter, one would have supposed, was a slip, but in the next sentence the author explains that the expression is "an unhappy one, but is frequently used and very convenient." Anyone with experience of teaching knows how prone students—especially students who are studying physics only as a means to an end—are to express themselves inaccurately without any encouragement from a text-book. The aim of their scientific training should be to emancipate them from such a tendency. There are many diagrams in the book. For the most part these are good, those in optics particularly so. The electrostatic ones are poor. Lines of force are drawn entering conductors at angles varying from 45° upwards. The examples and examination questions at the end of each chapter are a useful feature. Answers to the numerical examples are supplied. The paper is good as paper goes nowadays, and the type is clear.

Fevers in the Tropics. By Sir LEONARD ROGERS. Third edition. London: Henry Frowde and Hodder and Stoughton. 1919. Pp. 404. 30*s.*

Sir Leonard Rogers's well-known work, "Fevers in the Tropics," has now reached its third edition. In the preface the author states that ten years of very active advance in tropical medicine have passed since the first edition appeared. Many alterations and additions have therefore had to be made. The section on kala-azar has been largely rewritten, nearly every section has been revised and brought up to date, and the history, geographical distribution, ætiology, and prophylaxis have been placed before the clinical section to render the work more readable. Special attention to treatment has been given in the chapters on kala-azar, trypanosomiasis, malaria, and amœbic hepatitis. Of new subjects, recent work on typhus has been included, and short articles added on infective jaundice, trench fever, and Oroya fever. Of omissions, the dropping of the chapters on epidemic dropsy and liver abscess are the chief. The method of classifying tropical diseases by the amount of fever they show is hardly a happy one, and is open to criticism. It does not illustrate the chief points of diseases like kala-azar, sleeping-sickness, amœbic hepatitis, but as it was the method devised in the first edition it might be difficult for the author to change it now. The references to the literature are incomplete. Unless fully given it would be better to omit them. On the whole, the high standard of previous editions is maintained throughout the text, and the book is a pleasant one to read.

Reconstruction Therapy. By WILLIAM RUSH DUNTON, Jun., M.D., Assistant Physician at Sheppard and Enoch Pratt (Mental) Hospital, Maryland, U.S.A. With illustrations. London and Philadelphia: W. B. Saunders Company. 1919. Pp. 236. 6*s.* 6*d.*

THIS book has been written by an assistant physician of an American mental hospital who has evidently had considerable experience of occupational work for mental patients. For several years he has been responsible for a training course in occupational therapy for mental nurses at the Sheppard and Enoch Pratt Hospital and has written a manual of occupation therapy for nurses. As the result of this he has written excellent chapters on the duties of the occupation director, the financial side of occupation therapy, and training courses for nurses; the value of occupation in the treatment of the insane is fully brought out. Incidentally, he has written a very readable chapter on occupational therapy for the blind. One chapter gives a plan for the organisation of the re-educational facilities of a community which is at present being worked out in Baltimore and vicinity. Yet in spite of these good points we are constrained to say that the book as a whole is neither well written nor well thought out. In a few places the writer is unintelligible; in others the train of thought is not consecutive. The title is misleading; it would seem that the writer's experience of the surgical side of the subject is not sufficient to enable him to deal with that side of reconstruction therapy. But he certainly points out how the lives of patients in hospitals can be made more interesting. A useful bibliography of occupational therapy is included.

Teaching the Sick: A Manual of Occupational Therapy and Re-education. By G. E. BARTON, A.I.A., Director of Consolation House. Illustrated. London and Philadelphia: W. B. Saunders Company. Pp. 163. 6*s.* 6*d.*

THIS book sketches a course for the re-education of cripples in joinery, and is the result of the author's experience, not only in teaching the sick and training teachers of the sick, but of his own efforts to do such work. "With his whole left side practically useless" he started out to reclaim a piece of land, and make such repairs and build such new sheds and poultry houses and the like as were necessary. Having succeeded in so doing, Mr. Barton hands on the tricks of his trade. The patient is introduced through paper folding to mechanical drawing, the simplest appliances being used at first. Chip carving and modelling in wax and cardboard lead up to wood-working. The plane is the first tool used, then the saw; the reciprocating drill prepares the patient for the use of the hammer. For joinery in bed the "Consolation House Carpenter Shop" has been invented and assembled. The book is very readable; it is slight, but achieves a useful end.

A Text-book of Hygiene for Training Colleges. By MARGARET AVERY, B.Sc. Lond., M.R.San.I. London: Methuen and Co., Ltd. 1919. Pp. 324. 7*s.* 6*d.*

IF the training colleges could realise the inspiration behind the new syllabus of hygiene which the Board of Education has recently issued they would be very critical of text-books on the subject. The content of this book is obviously based upon the old syllabus, and in order to bring it into line with the new syllabus is amplified by the addition of two—perhaps three—chapters, chiefly dealing with legislation as it affects child life, and with maternity and child welfare work. This latter-named chapter is obviously not derived from first-hand acquaintance with such work, and actually neither this one nor that on legislation contains any reference to the Maternity and Child Welfare Act, 1918.

The author would have been well advised to be more guarded in her statements on certain medical problems, such as the ætiology of rickets. Her psychology, too, is somewhat out of date, throwing little light on the real problems of mental hygiene. Considerable care to give references has, as a rule, been observed, but they are lacking just exactly where they are particularly needed. We should be greatly interested, for instance, to know which are the schools where "over eleven per cent. of infants take it (alcohol) daily and thirty-four per cent. occasionally." The statement that the infant mortality-rate has increased during the war is a sad example of inaccuracy.

The author has a fluent style, so consciously free from technicality as to be somewhat carelessly colloquial, and the ease of expression may tend to distract attention from a careful examination of the substance of the book.

JOURNALS.

Tubercle: a Monthly Journal Devoted to all Aspects of Tuberculosis. Vol. I., No. 2. November, 1919. London: Bale's Medical Books and Journals. 25*s.* per annum.—The second number of this monthly journal opens with a suggestive paper read by Dr. E. L. Collis at the Newcastle Congress of the Royal Sanitary Institute on

the Effect of Occupation on the Incidence of Pulmonary Tuberculosis. Occupation may affect a disease as to (1) its prevalence or (2) its type, and pulmonary tuberculosis exhibits both these results. The effect on prevalence is shown by a study of the figures of sex and age groups and of social groups. For instance, in females under 15 the mortality is higher than in males, probably because boys lead a more active outdoor life, but the prevalence is reversed when in later life industrialism affects males more than females. Age variations also occur, presenting special mortality in young adults and in middle age in certain industrial and rural districts (Brownlee). There are thus occupational conditions which cause an increased prevalence at mid-life—the period when industrialism has had time to make its mark on the body. Further, Dr. Major Greenwood has shown by statistics of women employed under war conditions that industrialism tends to raise the female mortality to the male level. As to the influence of occupation on the type of disease, the case of workers exposed to silica dust is a clear case, contrasting with the cases of boot and shoe operatives, printers, and tailors, in whom an increased prevalence is present without change of type. In both cases Dr. Collis contends that the causative factor may be defective ventilation—in the one case of the workshop, and in the other a deficiency of "internal" ventilation of the lung due to silicosis.

The next article, Prognosis in Tuberculosis, by Professor Kraus, of Berlin, has a long and largely irrelevant dissertation on the *thorax phthisicus*, but contains a good account of the effect of pregnancy on tuberculosis of the lungs, and of the indications for abortion. The author takes a more favourable view of the prognosis than that commonly held in this country. The subject is pursued further in a useful collection of abstracts from American and continental sources. Another series of abstracts deals with a large number of cases of tuberculosis treated by heliotherapy and various artificial rays. The method of collecting the scattered material on a given subject is much to be commended. In an editorial article on residential treatment of tuberculous soldiers, it is rightly pointed out that there is a tendency to exaggerate the value of the permanent colony scheme to the detriment of older measures, which require elaboration in directions indicated by experience and which must in any case be the foundation of progress in the future.

A review of recent progress in Scandinavia and Finland records the increasing recognition of light treatment, both in surgical and (with less assured results) in pulmonary cases. Artificial pneumothorax, thoracoplasty, and thoracoscopy, with Jacobaeus's operation, are all in vogue, while sociological measures and research are also being pushed forward. Under the heading "Central and Local Authorities," various reports are reviewed; among them that of Dr. G. Lissant Cox, who states that arrangements have been made with the medical officers of health that notifications should go first to the tuberculosis officers—a plan which should be generally adopted, as the old system leads to unfortunate delay. Many pages of the journal are given to reporting the annual meeting of the National Association for the Prevention of Tuberculosis, the first meeting for five years, and also the first since the foundation of the Ministry of Health. The proof-reading leaves something to be desired.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

CHELTINE MILK AND MALTED FOOD (No. 1).
(CHELTINE FOODS CO., CHELTENHAM.)

THE proportion of milk nutrients contained in this preparation may be judged from the amount of milk fat in it which, according to our analysis, was 17·50 per cent. This represents approximately 62 per cent. of milk solids, assuming that the milk employed contained an average of 3·5 per cent. of fat. The nourishing value is increased by the constituents of active malt, the diastase of which renders the casein flaky rather than curdy when separated by the gastric juice. The complete analysis was as follows: fat, 17·50 per cent.; proteins, 21·16 per cent.; sugars, 28·85 per cent.; dextrin, 11·40 per cent.; starch, 12·99 per cent.; mineral matter, 3·50 per cent.; moisture, 4·60 per cent. The total matters soluble in cold water amounted to 40·25 per cent. The food is intended for infants from birth to the age of 5 months, and there is evidence that it appears quite suitable for this purpose when natural resources are not available.

PINHEROIN.
(OPPENHEIMER, SON AND CO., LTD., 179, QUEEN VICTORIA-STREET, LONDON, E.C. 4.)

Pinheroin is the name given to a syrupy linctus containing in each fluid drachm 1/40 gr. of dia-morphine-hydrochloride (syn. heroin), 1 gr. terpin hydrate, and 20 minims of essence of Canadian pine. The formula was suggested by authorities on the treatment of respiratory trouble, and the linctus is favourably spoken of in relieving bronchial catarrh, asthma, and irritable winter coughs. Pastilles are also prepared with the same drug foundation, and a further preparation is pinheroin compounded with creosote hydrate free from caustic action. All three preparations are agreeable to take. The absence of morphine was indicated in our analysis by no blue colouration resulting on the addition of perchloride of iron. There was a colouration produced, however, in the creosote compound due to the phenolic constituent.

IGLODINE.
(THE IGLODINE CO., LTD., MANOR CHASE, NEWCASTLE-ON-TYNE.)

Iglodine is a clear, colourless fluid with a smell reminiscent of tri-bromo-phenol. It is a definite organic iodine derivative, and its formula is represented as $C_1H_7I_3 + H_2O$. The active constituent is miscible with water. Three preparations have been submitted to us, respectively described as (1) iglodine antiseptic (standard), (2) iglodine concentrated aqueous (40–1), and (3) iglodine embrocation. The preparation has been widely used in the dressing of wounds, and a well-known bacteriological authority has established its effective germicidal power compared with other well-known antiseptic agents. Part of the iodine was liberated, we found, on the addition of peroxide of hydrogen and acid, and the availability of the iodine thus shown accounts mainly, no doubt, for the antiseptic value of the preparation.

VALERIANATE "GABAIL," DEODORISED.
(THE ANGLO-FRENCH DRUG CO., LTD., 238A, GRAY'S INN-ROAD, LONDON, W.C. 1.)

The disagreeable odour and taste are well-known drawbacks to the use of valerian preparations in medicine. Many attempts have been made to mask these undesirable characteristics with a qualified success. The above preparation from the Laboratories Gabail, Paris, contains in 100 g. 10 g. of the extract of valerian (French Codex), 3 g. of valerianic acid, with a sufficiency of ammonium carbonate in glycerine and distilled water. There is also prepared a mixture on the above principles, but with the addition of strontium bromide. In neither instance is there any suggestion of nauseous smell or taste, and as the drug is of admitted value, chiefly in functional nervous diseases, it is an important advance to render it agreeable to the patients.

HYPOCHLORINE.
(L'ANTISEPTIQUE, 48, RUE DE LONDRES, PARIS.)

As far back as 1894 an investigation undertaken by a LANCET Commission as to the antiseptic and disinfectant power of electrolysed sea-water elicited the fact that hypochlorous acid, its active constituent, was second to none in this respect. Since that time this conclusion has been abundantly confirmed, and solutions of hypochlorous acid prepared in different ways have been freely and advantageously used in the vast antiseptic treatment called for during the war. "Hypochlorine" is described as "une solution aqueuse d'hypochlorite de magnésie," a description which corresponds with that of the electrolysed sea-water introduced by M. Hermite 25 years ago, except that "hypochlorine" is free from excess of inert salines. The active agent is in reality hypochlorous acid. On adding potassic iodide to the fluid iodine is at once liberated, corresponding, we found, to 3·546 g. of available chlorine per litre. The total saline constituents amounted to 16 g. per litre. Bacteriological experiments show that "hypochlorine" is a powerful germicide, and the fluid has the advantage of being non-corrosive and non-poisonous. Its power of destroying noxious odours is, further, an important feature.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 22, 1919.

The Future of Medical Research.[1]

THE fifth annual report of the Medical Research Committee has made a prompt appearance, for the Committee are submitting at the beginning of November to their late authority, the National Health Insurance Joint Committee, an account of a year's work up to the close of last September. We congratulate the Medical Research Committee upon this readiness, especially as the period under review, covering the transition from war to peace, and the setting up of the Ministry of Health, has presented problems which required thoughtful handling. In considering the document, therefore, we have to think, first, of the scientific activities of the Committee during the war, and, secondly, of the future of medical research in the United Kingdom under the altered but hardly less difficult conditions of peace, with social circumstances in flux, and a sad decrease in the value of money. In respect of the services done for the country by the Medical Research Committee during the war there is no doubt that the Committee, from the moment—the earliest moment possible—when their energies were placed at the disposal of the War Office, had an important influence in promoting the developments of scientific medicine in the Naval, Military, and Air Services, as well as in large civilian enterprises undertaken in defence of the realm or offence of the enemy. The Committee from the beginning prompted the employment of scientific men for special investigations, and many of those best fitted to carry on specific inquiries received remuneration through the agency or discretion of the Committee, whether indirectly by way of officers' pay or directly by way of grants from the public funds. The report sets out under appropriate headings the work done by the separate departments during the year, and the full references to published papers show how various and how practical that work has been.

An annual report is necessarily a report of work done, but the introduction of the Committee lays little stress on past exploits. They leave the references to tell that part of the story, and occupy most of their modest space in stating the resolution of the Committee to secure that the intensive studies of the war period shall be aimed for the future, and from as many directions as possible, towards the solution of health problems under the normal conditions of peace. The organisation of scientific work promoted during the war has already been dissolved over large fields of research; but that much of that work, which in its origin had a purely military objective, will be directly applicable to medical work in civilian life has been for long apparent to all medical men. To preserve for the country an invaluable continuity in the struggle against disease is now the aim of the Committee, who have made, and are making, every attempt to maintain what has been most valuable and promising among the enterprises of their collaborators. But their pecuniary resources have now become totally inadequate. Such a programme can only be fulfilled if more money is found by the State. The progress of medical research in the United Kingdom must to a great extent be proportional to the pecuniary resources on which the Committee can depend. The Committee, in setting this position frankly before the public, are placing themselves in the plight, now so familiar to all organisers of scientific research, that while the public expects results for money given, those directing research cannot always promise what the results will be; they cannot even say what are the grounds for believing that value will shortly be returned for subsidies received. Yet distribution of public money must be accounted for to Parliament—that is an elementary principle of democratic government. Well, Parliament will be wrong to withhold endowment, where medical research is in question, with the idea that it is economical to do so until a promise is exacted that a given investigation will have a definite issue. As a matter of fact, to subsidise the Medical Research Committee is not an expenditure but a form of insurance.

We have therefore to inquire how the future benefits are to be secured. By the terms of the Ministry of Health Act the duties of the Medical Research Committee will pass in June of next year under the control of a Committee of the Privy Council, while the National Health Insurance Joint Committee, formerly the authority of the Medical Research Committee, has now been affiliated to the Ministry of Health. It is obvious that the national benefits, as far as all these bodies are concerned, will largely depend on the methods by which the linking up is effected between the Ministry of Health and the Medical Research Committee. If the scientific progress made in times of war is to be continued at the same or at an accelerated pace in times of peace, and if the intensive researches founded to meet military exigencies are to be employed for the benefit of the community in normal times, the association between the Committee and the Ministry must be real, flexible, and open to development on all sides and upon the initiative of either. The basis on which this can best be done is indicated, it seems to us, by the obvious circumstances of the position. The Ministry of Health will have before it all day, every day, and with any pathological circumstances that can be imagined, problems in health where medical research will be required. The Ministry of Health will be served not only by the science of the general practitioner, the consultant, and the specialist in their places, but by the existing State medical organisations, the members of which are for the most part a highly trained body of men. From this wide periphery information will constantly be reaching the Ministry as to where particular assistance is needed, and for that assistance the Ministry will turn to the Medical Research Committee. The Committee, with a large experience of analogous responsibilities during the war, will be able to institute intensive research upon the questions submitted, always supposing that they are in receipt from the State of a subsidy with which to command the aid of the best men. And it should be understood that the position of the Medical Research Committee, when such events arise, would be auxiliary, not directing. It is particularly important that the medical profession should understand that the Medical Research Committee is not a bureaucracy

[1] Fifth Annual Report of the Medical Research Committee, 1918-1919. London: H.M. Stationery Office

claiming supervisory powers, but a Government body whose business it is to help the efforts of medicine—individual, collective, and institutional—along various lines; and it should be noted that, from the beginning of their work, the Committee have realised the necessity for using all available resources to bring the study of medicine at the bedside into close touch with the modern laboratory. Indeed, it was originally the design of the Committee to include a number of research beds in their central institute, but, the impracticability of this being recognised, arrangements have now been made for members of the staff of the Committee to do their work away from their own central institute, at the London hospitals where schemes of research are being organised. The hospitals will in this way be joined in the general scheme of research, while the practical step towards complete and mutual understanding between the Medical Research Committee and the Ministry of Health may be secured by ensuring that the Committee of the Privy Council, the authority under which the former work, should be composed of persons enjoying high position in the organisation of the latter.

Qualitative Problems of Food-Supply.

THE problem of the proper nutrition of the human population of the world upon the available supplies is the most pressing issue of our time. In regard to the quantity of food the matter is in the hands of those who produce and distribute. Medicine is largely helpless. But in regard to its quality there is much to say. Fortunately the colossal need has produced workers of like calibre, and in Professor E. H. STARLING'S reprinted[1] Oliver-Sharpey lectures on the Feeding of Nations we have the elements of a scientific study of the composition, provision, and distribution of food on which all future work must largely be based. The particular form of scantiness varies from country to country; in some there is a shortage of milk, in others of meat, and in yet others of all and every masticatable article. Scattered outbreaks of deficiency disease have occurred all over the world during the last two or three years; in Mesopotamia scurvy broke out among our Indian troops and beri-beri among the British troops; in Central Europe all possible forms of deficiency disease have occurred at the same time, and some of them in the same people. The visit of Professor K. F. WENCKEBACH to London last week made it abundantly clear that in Vienna, where he presides over the international relief measures, any deficiency disease may break out at any time. On this account the mission at Vienna of Dr. HARRIETTE CHICK, on behalf of the Lister Institute, may be productive not only of results of scientific interest, but of great influence on the nutrition of a people.

Deficiency in diet formed the topic of a very searching discussion at the Section of Therapeutics of the Royal Society of Medicine last Tuesday afternoon. Professor F. G. HOPKINS opened the debate by pointing out that the vitamine hypothesis of deficiency disease has passed the early phase when novelty arouses undue enthusiasm and uncritical opposition. The experimental work of the Lister Institute has placed beyond doubt the main facts regarding the production of scurvy and beri-beri. The causation of rickets is less well established as due to deficiency disease, although in experimental work the nature of the fat in the diet has been shown to be the sole critical variant. Professor HOPKINS noted the suggestive fact, confirmed by others in the debate, that in prolonged fasting deficiency disease does not develop. In the case of pellagra, evidence, he said, pointed not to a lack of vitamine but to some other grave deficiency in the diet. Dr. F. D. BOYD, of Edinburgh, communicated his important investigations into the health of Turkish prisoners of war. Among them he found the first symptoms of pellagra to consist in a failure to assimilate fat and protein, while, long before ordinary clinical signs of the disease developed, there existed a pre-pellagrous state in which supposedly healthy individuals were excreting far more than their normal output of protein and fat. He defined anew the "biological" value of protein in diet. The amount of protein needed to keep a man of 70 kg. body weight in nutritive balance varied, he said, from 30 g. when the source of protein was meat, up to 102 g. when the source was maize. Pellagra began to appear when the biological protein value in the diet fell below 40 g. daily. Dr. H. E. ROAF laid stress on the wasted and semi-translucent intestine found post mortem in pellagrous cases, the intestinal tube evidently being quite abnormal in regard to absorptive capacity. On behalf of the Lister Institute Miss E. M. HUME set forth the merits of marmite and wheat-germ for the prevention of beri-beri in armies, egg-yolk and dried peas being far behind in potency. We hope to give an extended account later of this discussion, timely as it was in view of the national problems ahead.

An important contribution on the accessory food factors in raw cow's milk appears in the November number of the *Biochemical Journal*. In one series of experiments undertaken by Miss R. E. BURNES the animals chosen were guinea-pigs; in another series of experiments undertaken by Miss HUME monkeys were employed. Taking the results together it was found possible to maintain good health in animals of 300 to 400 g. weight if 100 to 150 c.cm. of raw cow's milk were consumed daily. It is an interesting observation, however, that when dried milk was substituted for fresh milk scurvy was not prevented, even when amounts equivalent to the fluid milk were taken, and this was true whether the dried milk was of recent manufacture (1 or 2 weeks old) or of much greater age (6 to 12 months). On the other hand, no indication was obtained from either series of experiments that the growth-promoting properties of fresh milk suffer any serious damage during drying. But all the evidence is in favour of employing an extra antiscorbutic in the diet of infants nourished upon dried cow's milk. It is suggested for this purpose that the raw juices of oranges, swedes, and tomatoes be used for the sake of their richness in accessory food factors. We note that the dried milk used in the investigation was reduced by means of revolving drums, the temperature of which is considerably over 100° C., although the time of contact is said to be only a few seconds. It would be interesting to determine whether milk dried at a comparatively low temperature, as in the spray process, suffered any loss of antiscorbutic property in the same way as the milk powder used in these experiments. Individually these researches may seem small and particulate, but their steady accretion is overlaying the globe with a stratum of exact dietetic knowledge which may give a new lease of life to the human race

[1] Longmans, Green and Co., pp. 146, 5s.

Syphilis and Insanity.

AN address was delivered recently to the Fellowship of Medicine by Sir GEORGE SAVAGE, in which the relations between syphilis and insanity were discussed in some detail from the clinical and ætiological points of view. This discourse contained many lessons of interest and importance, not only to the general practitioner, but to some of those younger specialists whose positivist inclinations in pathology may well, perhaps, be corrected by due consideration of an elder's weighty words; we therefore look forward with interest to their fuller publication in the columns of a contemporary. One of the more important of these lessons is that experience shows the practical unwisdom of the prevailing mental habit of insistence on the doctrine of the "single cause." However necessary for teaching purposes, or for the systematic classification and delimitation of clinical entities, this imputation of single causes of disease may be, clinical experience and careful thought alike impress us with the obligation of recognising the complexity of the causation of disease. Herein Sir GEORGE SAVAGE, as a clinician of unrivalled authority and experience, ranges himself beside the late Dr. MERCIER, who, in one of the most valuable of his essays—that on "Causation"—declared repeatedly that what we call "*the*" cause of a disease is that in which, for our purposes, we are most interested. The position is now accepted—and Sir GEORGE SAVAGE does not dispute it—that without antecedent syphilis there is no general paralysis of the insane. In consequence, non-syphilitic clinical forms, apparently closely resembling general paralysis of the insane, are differentiated therefrom, and are placed in different categories by the application of pathological tests. We therefore consider syphilis as "*the*" cause of general paralysis. Nevertheless, as Sir GEORGE SAVAGE points out, and not for the first time, we do not know why some persons, and, indeed, some races of mankind, though sodden with syphilis, should yet escape general paralysis of the insane. Moreover, some persons already infected seem only to become the victims of "G.P.I." after the intervention of an accidental or incidental factor. Thus, Sir GEORGE SAVAGE has noted many cases in which indications of general paralysis became first noticeable after influenza, contracted during prevalence of that disease; and, like French observers, he has seen groups of cases, serially infected by syphilis, and all, or several of them, developing general paralysis. Some have believed that there are "strains" of spirochætes specially prone to produce general paralysis, and WIEDERSHEIM, 30 or more years ago, in his "Structure of Man," hinted that even such pathological changes as those of tabes may be indirectly due (under the action of the spirochæte, it must now be claimed) to the occurrence of morphological variations in the lumbar cord. Wider approaches are thus opened up to the one goal of all physicians.

Syphilophobia is too often dismissed impatiently. Sir GEORGE SAVAGE devoted some attention to a group of cases wherein the subjects, without having run any real risk of contagion, are yet obsessed by dread of syphilis; and he observed, with truth, that the youthful masturbator and the ascetic celibate alike may become so obsessed—the one during life's evolution, the other during its decay. Classic syphilophobia, on the other hand, follows actual infection or serious risk—more commonly, we think, the former. Indeed, it is probable that the spirochæte itself, and not the mere idea, plays a real part in the production of the mentality of the syphilophobe, when the need for diagnosis on a pathological basis is urgent. For if there are some cases which fall within the province of the psycho-analyst, there are others which need intelligent, careful, and conscientious specific treatment by drugs. Moreover, danger point is reached by not a few in this distressing and distressed condition, who, fearing and believing that others know the source of their misery, avoid society, and in extreme instances may seek escape in suicide. But there are also certain cases in which mental, moral, and physical degeneration may ensue, rapidly and progressively, in the years or months closely consequent to infection. Perhaps such are less common than they once were, but they do occur, and a neuronic rather than a vascular pathological basis may be suspected. Possibly these cases can be regarded as analogous to the acute myelitis and nephritis sometimes seen during the late secondary stages of syphilis. The association between what, in a generic sense, may be called "fits" and syphilis, is complex, but its importance is evident. Undoubtedly, "fits" which are truly epileptic are common in children the subject of congenital syphilis, or, what is not quite the same thing, whose parents have been syphilitic; while, in the juvenile form of general paralysis, less familiar to the practitioner than it should be, "fits" of various clinical form occur. But, apart from the irregular "fits," or seizures of classical general paralysis, slight "fits" or faints sometimes happen under stress or strain to those who have been infected; and they are apt to be followed by progressive mental enfeeblement, although the course of classical general paralysis is not pursued. Sir GEORGE SAVAGE, while suspecting local vascular change, in such cases, as the underlying anatomical factor, points out how frequently the diagnosis of general paralysis is wrongly made. The ultimate outcome, however, is certainly bad; feeblemindedness generally results. A valuable and practical distinction is to be made, moreover, between "general paralysis of the insane" beginning as "locomotor ataxy" and locomotor ataxy accompanied by manifestations of insanity. The recognition of the distinction is important, and difficulty is thereby lessened.

With respect to one important matter, namely the relation between imbecility, idiocy, and parental syphilis, Sir GEORGE SAVAGE accepted the positive results of the Wassermann test, when applied to so many idiots and imbeciles who do not display specific characters of congenital syphilis, as evidence that parental infection has played a part in the production of the mental and physical arrest, even when no further evidence of parental syphilis can be obtained; and, from garnered wisdom he produced clinical evidence which sustains the confidence of the laboratory workers. Yet he insisted, and rightly, that the children of syphilitics, more often than others, apart from all question of syphilis, are the offspring of the less desirable type of parent; while their surroundings, more often than those of others, are apt to be unfavourable or degrading. The note of caution in respect of the attribution of certain effects to a single cause was thus sounded, at the conclusion as well as at the beginning, of a vigorous and progressive lecture.

Annotations.

"Ne quid nimis."

STATE AID TO THE UNIVERSITIES OF OXFORD AND CAMBRIDGE.

BOTH the ancient Universities have applied for financial assistance to the State, and as a matter of course it has followed that Royal Commissioners have been appointed to inquire into the financial resources of the Universities and their constituent colleges and halls, as well as into the relations of the affiliated foundations to any central administration. Mr. Asquith is the chairman of the Commission, which forms one body of three committees—namely, a Committee for the University of Oxford, a Committee for the University of Cambridge, and a Committee on Estates Management. The Secretary of the Commission is Mr. C. L. Stocks, an Assistant Secretary to the Treasury. The following is the personnel:—

Oxford Committee.

The Right Hon. H. H. Asquith (chairman).
Professor W. G. S. Adams, Gladstone Professor of Political Theory and Institutions, Oxford.
Professor W. H. Bragg, C.B.E., F.R.S., Quain Professor of Physics, London.
Lord Chalmers, G.C.B., late Secretary to the Treasury.
Mr. Albert Mansbridge.
Sir H. A. Miers, F.R.S., Vice-Chancellor of Manchester University.
Miss Emily Penrose, O.B.E., Principal of Somerville College.
Sir John A. Simon, K.C.V.O.

Cambridge Committee.

The Right Hon. G. W. Balfour (chairman).
Dr. H. K. Anderson, F.R.S., Master of Gonville and Caius College.
Miss B. A. Clough, Vice-Principal of Newnham College.
Sir Horace Darwin, K.B.E., F.R.S.
Sir Walter M. Fletcher, K.B.E., F.R.S., Fellow of Trinity College.
The Right Hon. Arthur Henderson, M.P.
Dr. Montagu R. James, LL.D., Provost of Eton.
Mr. G. M. Trevelyan, O.B.E.
Professor Arthur Schuster, Fellow and Secretary of the Royal Society.

Committee on Estates Management.

Lord Ernle (chairman).
Mr. H. M. Cobb, Fellow and Member of the Council of the Surveyors' Institution.
Sir Howard Frank, K.C.B.
Sir J. H. Oakley, Past-President of the Surveyors' Institution.
The Hon. Edward Strutt.

Undoubtedly the public support of Oxford and Cambridge bears no proportion whatever to the value of their public work. Now and again we learn of benefactions to both, though these are generally in the form of bequests to the particular college of which the testator had been a member and not to the Universities themselves, whose benefit is consequently only indirect. Again, neither Oxford nor Cambridge can expect to receive from local generosity large sums of money; the huge benefactions to the American universities, which owe their existence to local spirit, can have no counterpart here. The ancient Universities having approached the State will recognise that the State, in return for any grants made, will expect to have some reasonable responsibility in the allocation of the grants; but probably the day is gone by when the authorities of Oxford and Cambridge shudder at the thought of State interest in their affairs.

THE LISTER MEMORIAL.

Two tablets in memory of Baron Lister of Lyme Regis were unveiled on Tuesday, Nov. 11th: the one, a marble portrait in bas-relief, to be a permanent memorial of Lister's work in University College Hospital; the other, similar but smaller, to be erected in University College. Sir George Makins, in unveiling the former, traced the development of Lister's great principle which revolutionised the practice of surgery in his time and asserted itself in every ramification of the science of preventive medicine. Sir Joseph Thomson spoke of Lister's association with the Royal Society, of which he became a Fellow at 33 years of age. Both tablets have been worthily executed by Professor Havard Thomas.

TUBERCULOUS MENINGITIS AND LETHARGIC ENCEPHALITIS.

THE difficulty in diagnosing between these two conditions is well illustrated by a case of tuberculous meningitis recently reported by Loygue[1] in a man, aged 27, in whom this diagnosis was discarded, not only during life, but even on naked-eye examination post mortem, which did not appear to contradict the hypothesis of lethargic encephalitis suggested by the patient's symptoms. It was only after microscopical examination, which showed an absence of the lesions characteristic of lethargic encephalitis described by Marie and Trétiakoff in the locus niger and gray nuclei, and the presence of tubercle bacilli that a correct diagnosis was established. The symptoms presented by the patient closely resembled those of a group of patients previously observed by Loygue, in which the clinical picture, epidemiological character, and macroscopical appearances of the nerve centres post mortem excluded the diagnosis of tuberculous meningitis, the existence of lethargic encephalitis being confirmed by the fact that three of the five cases recovered. The symptoms in Loygue's patient were torpor and somnolence, disturbance of speech, subfebrile temperature, and rapid and progressive loss of flesh, followed by sphincter disorders, characterised first by incontinence and then by retention of urine, doubtful meningeal symptoms and, towards the close, paresis of the levatores palpebrarum, ocular convergence, and dysphagia. The absolutely clear cerebro-spinal fluid, its scanty albumin content, and absence of a cellular reaction were in favour of excluding both cerebro-spinal and tuberculous meningitis. Subacute syphilitic meningo-encephalitis was excluded by a negative Wassermann reaction in the blood and cerebro-spinal fluid. The autopsy showed a diffuse congestion of the brain without any obvious lesions on the convexity or base, apart from an œdematous and infiltrated appearance of the region between the inferior surface of the cerebellum and the posterior surface of the pons and medulla, and slight adhesions in the fissure of Sylvius. There was no trace of any granulations. Examination of the thoracic and abdominal organs was negative and there was no bony or glandular tuberculous focus. On microscopical examination lesions of meningo-encephalitis were found in the region of the medulla, pons, cerebral peduncles and lower part of the Sylvian fissure, with numerous tubercle bacilli scattered throughout the inflammatory tissue.

[1] Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, 1919, 3e série, xliii., 769-775.

THE HUNTERIAN MEDALLIST.

A NUMBER of distinguished guests attended the centenary dinner of the Hunterian Society held at the Trocadero Restaurant on Nov. 12th, when the President, Dr. W. Langdon Brown, handed the silver medal of the society to Mr. John Adams in recognition of his work at the Thavies Inn venereal clinic for expectant mothers. Sir Frank Dyson, the Astronomer Royal, was happy in his allusion to the medallist's namesake, the discoverer of Neptune. It may be recalled that the planet betrayed itself by its slow movement, appreciable to the discerning eye, upon its background of fixed stars. Mr. Adams's progressive work on the salvarsan treatment of mother and fœtus stands out in like manner upon the more stationary background of average practice.

THE TREATMENT OF INFANTILE BERI-BERI.

BERI-BERI has been a disease of frequent occurrence in the Philippine Islands for many years. Since the American occupation some of the medical officers from the United States, stationed in the Philippines and attached to the Bureau of Science at Manila, have carried out experimental investigations on the ætiology and treatment of the disease, and have thereby given considerable assistance in the elucidation of certain of the problems connected with this interesting malady. The results of these researches on beri-beri have generally been published in the *Philippine Journal of Science*, and in our columns we have commented upon them from time to time as they appeared. Our attention has again been directed to the subject by reading the recently issued annual report for 1918 of Dr. A. J. Cox, director of the Philippine Bureau of Science. Adverting to the incidence of infantile beri-beri, which in past years has been a considerable factor in the production of a high infantile death-rate, Dr. Cox draws attention to the beneficial results which have followed upon the treatment of the disease by an extract of rice polishings, locally known as "tiki-tiki." Investigations formerly carried out had shown a high incidence of beri-beri among women, and especially among mothers who were suckling their babies. It was also shown that these women were suffering from under-nourishment, and that polished, or over-milled, rice bulked largely in their dietary. Their breast milk was poor in quality, and to this circumstance was attributed the occurrence of beri-beri in their infants. The Bureau of Science began to prepare the extract of rice polishings in 1914, in which year no fewer than 889 children under one year of age died of beri-beri in Manila. In that year only 58 litres of tiki-tiki were prepared; in 1915 the amount was increased to 200 litres, in 1916 to 300, in 1917 to 400, and in 1918 to 500 litres, which is estimated to be sufficient to treat 10,000 infants. Prior to 1914 95 per cent. of the babies in Manila attacked by beri-beri died, but now, and corresponding to the increased employment of the rice-polishings extract, this percentage has been reduced to practically nil, the only deaths from infantile beri-beri now recorded being instances in which the illness had not been notified to the health authorities until it was too far advanced to benefit by treatment. In view of these successful results Dr. Cox urges the Government of the Philippines to grant further financial help in order that the plant for the preparation of tiki-tiki may be enlarged and the use of the remedy made available on a more extended scale and in a wider area. We learn, also, from Dr. Cox's report that a series of experiments on the treatment of adult beri-beri by means of an autolysed extract of yeast has been carried out, and a certain amount of this extract prepared for use by the Bureau of Science. Dr. Cox promises a report in an early number of the *Philippine Journal of Science* on the results obtained in adult beri-beri by the administration of this extract.

SYPHILITIC RECTO-VESICAL FISTULA.

THOUGH syphilis is well recognised as a cause of ulceration and stricture of the rectum, cases resulting in communication with the bladder are extremely rare. At a meeting of the Académie de Médecine of Paris on Oct. 28th, M. P. Peugniez, of Cannes, reported the following case. In July, 1918, he saw in consultation a man aged 69 years. His medical attendant said that he was suffering from cancer of the rectum and that a surgeon had proposed colostomy. The history was that in March he had a sudden attack of frequency of micturition with severe pains. He passed urine every hour, day and night. After these symptoms had lasted four or five days gas was passed from the urethra during micturition and the urine was turbid. In June traces of fæcal matter appeared in the urine and soon fragments, of which the character was undoubted, were passed during micturition. The urine became more and more turbid and deposited a fœtid sediment of fæcal debris. There were no rectal symptoms. Cystoscopy revealed an elliptical perforation behind the trigone, a little to the left of the middle line. Its borders were regular and showed no exuberant granulations. They were cut perpendicularly as if a piece had been punched out of the bladder wall. The rest of the mucous membrane was red and rich in vascular arborisations. During the examination fæcal fragments were seen to float in through the perforation. Rectoscopy showed at a distance of 15 cm. from the anus a perforation of the same size and character as was seen in the bladder. There were no granulations and no tumour, and the rectal mucous membrane was very little altered in colour or suppleness. M. Peugniez at once thought of a syphilitic lesion. There was no history of a primary sore, but the patient had 15 years before "psoriasis" of the nose and cheeks, which yielded in a few days to specific treatment. Five years before he came under observation a mobile epigastric tumour appeared and rapidly attained the size of the fœtal head. Radiography showed that it compressed the stomach. It was complicated by two attacks of icterus and the general health failed. Under treatment the tumour disappeared in a few weeks and the patient recovered. For the recent recto-vesical complication M. Peugniez prescribed mercury and iodine. At the end of August fæcal matter in the urine had become exceptional. In September cystoscopy showed that the ulcer was cicatrised, but after the examination fæcal matter appeared in the urine. A fortnight later it had totally disappeared. In November cystoscopy showed that the ulcer had healed, but after the examination gas was passed in the urine for a few days. After that recovery was definite. Recent examination revealed the scar of the ulcer in the bladder as a dark spot. With the rectoscope scarcely any trace of the ulcer could be discovered. The general condition of the patient was perfect. It is remarkable that the

kidneys were unaffected, though the ureteral orifices were bathed for months in fæcal fluid. However rare syphilitic recto-vesical perforation may be, it is necessary to bear the possibility in mind in order to avoid mistaking it for cancer of the rectum and the performance of a useless and dangerous operation.

THE HEALTH OF TROOPS IN INDIA.

A White Paper[1] recently issued, dealing with the medical arrangements for troops on the North-Western Frontier, contains the replies made by the Government of India to criticisms in the House of Commons and the British public press. Many of the allegations are categorically denied, but in such a way as to leave the impression that the Government of India has concentrated on some exaggeration or inaccuracy, leaving the spirit of the accusation unanswered. A number of admitted abuses are explained on various political grounds. For instance, the requisition of certain streams owned by an Afghan tribe, recommended by the military authorities in 1916 and 1917, was not carried out by the Government for fear of local disturbances at an awkward time. Whatever the reason, however, it is surely bad generalship to send troops to a region where the water-supply is admittedly inadequate, and the connexion of the Kohat cholera epidemic with the water shortage is not denied. It is difficult from a perusal of the correspondence to judge to what extent the acknowledged deficiency in transport, hospital stores, and in medical staff was due to lack of foresight, and to what extent to circumstances beyond the control of the Government of India. The most encouraging piece of information in the White Paper is the announcement of the visit to India of Major-General Sir R. Havelock Charles, Medical Adviser to the Secretary of State. Sir Havelock Charles will discuss with local medical authorities—and we hope also with the rank and file of the profession—such matters as recruiting for the Indian Medical Service, the provision made for medical and sanitary training and research, and the organisation of the medical women, on the importance of which we recently commented. The visit should help to improve the mutual understanding on big medical questions between the Secretary of State for India and the Viceroy. We trust that future correspondence may indicate a desire on both sides to improve conditions rather than a facility in repartee.

THE LATE MR. R. H. HORTON-SMITH, K.C.

THE recent death, at an advanced age, of Mr. Richard Horton Horton-Smith, K.C., removes a well-known barrister whose professional work ended with the last century, and who since his retirement has devoted himself to the furtherance of political, artistic, and philanthropic causes. A well-known classic, his interests included music, Freemasonry, and hospital administration. His direct association with hospitals dates from 1898, when he joined the committee of King's College Hospital, and he became later chairman of University College Hospital. In 1904 he was elected a member of the committee of the Brompton Hospital for Consumption and Diseases of the Chest. He was also chairman of the Public Dispensary in Drury Lane, and just before his death received an address of gratitude for his labours on its behalf. Mr. Horton-Smith was a life governor of the three hospitals mentioned above, and also of St. Mary's and the Westminster Hospitals. He took the keenest interest in surgery, and during the later years of his life was such a regular attendant at the lectures at the Royal College of Surgeons as to be known there as "our legal member." There were many doctors among his wide circle of personal friends and his loss will be keenly felt in hospital circles.

[1] H.M. Stationery Office. Cmd. 398. Price 3*d*.

THE STAINING OF TUBERCLE BACILLI.

THE most delicate method for demonstrating the presence of Koch's bacillus by staining is that based on decolorisation by acids. Some acids, especially the mineral, exercise too violent an action, especially if prolonged; so that, in a sputum which contains few bacilli, the employment of them when in excess of the limit of the acid resistance may vitiate the result of the examination. The acids usually employed are glacial acetic, formic, oxalic, citric, tartaric and lactic, with the object of minimising the excessive decolorisation which occurs when mineral acids are used, and they have, moreover, the advantage of differentiating the tubercle bacilli from para-tubercle bacilli, which are acid-fast in less degree. Professor Antonio Gasbarini, of the University of Pavia,[1] is of opinion that the best results are obtained by the use of lactic acid as a decolorant. His technique is to treat the slide, the smear having been previously dried over the flame, with Ziehl's carbol-fuchsin for a few minutes, and then immerse it without washing in a 2 to 3 per cent. alcoholic solution of lacto-methylene-blue. This solution is prepared by making a mixture of an excess of methylene-blue with lactic acid 40 c.cm. and water 160 c.cm., with four parts alcohol of 95 per cent. The lacto-blue has a simultaneous decolorising and recolorising effect extending to all parts of the preparation, which is then washed in running water, dried, and mounted. To demonstrate the tubercle bacillus in urine the smear is treated with a 5–10 per cent. solution of soda with 5 per cent. alcohol in order to dissolve the fatty matter of the smegma bacillus which renders this micro-organism acid-fast. Koch's bacillus remains coloured red and easily distinguished from the associated flora and cytological elements which assume a clear, pale-blue tint not easily attainable with other methods. This method Professor Gasbarini asserts is much more reliable than those in which mineral acids are employed, and he has been able to demonstrate the presence of tubercle bacilli in sputum, urine, and fæces in doubtful cases where Ziehl's method had given negative results. Since the acid-fast property of Koch's bacillus is not deranged by the action of the lactic acid it is evident that the method may reveal its presence even when existing in small numbers and without previous centrifugalisation. Moreover, it enables a differentiation to be made between tubercle bacilli and the ordinary pseudo-tubercle, and by the same means the smegma bacillus is decolorised by the lacto-blue in 20 to 25 minutes, while that of tubercle is still well defined. The sharp staining of other non-acid-fast bacilli facilitates the investigation of the associated micro-organisms which are of considerable importance in tuberculous infections, and lends itself to the study of tuberculosis in the tissues themselves.

[1] Il Policlinico, Practical Section, July 13th, 1919.

THE ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL.

THE counting of the votes for the English Direct Representatives on the General Council of Medical Education and Registration was completed on Wednesday with the following result:—

Sir T. Jenner Verrall...	5362	Dr. E. H. M. Stancomb	3303
Dr. R. A. Bolam	4872	Dr. G. A. Main	2910
Mr. E. B. Turner... ...	4803	Dr. A. Blackhall-Morison	1761
Dr. J. A. Macdonald ...	4745	Dr. J. Brown...	1636
Mr. W. F. H. Coke ...	3534		
Dr. A. Welply	3491		

The first four names on the list are those of the gentlemen duly elected to the Council, which begins its next session on Tuesday, Nov. 25th. The figures of the Scottish poll were: Dr. Norman Walker, 974; Dr. Ebenezer Duncan, 823; Dr. Michael Dewar, 252. Dr. Walker has thus been re-elected to his place on the Council by the Scottish medical profession.

SILVER SALVARSAN IN SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.

AT a recent meeting of the Frankfort Medical Club Dreyfus[1] stated that he had treated 54 cases with 500 injections of soda silver salvarsan. This series consisted of 3 cases of early cerebral syphilis, 12 of cerebro-spinal syphilis, 26 of tabes, 6 of latent syphilis, 4 of multiple sclerosis, and 1 each of polio-encephalitis superior, Landry's paralysis, and malignant tertian. The dosage in syphilitic disease of the nervous system is a decidedly more complicated matter than in the other stages of syphilis. Cautious procedure is required in order to avoid reactions. Patients who are confined to bed can tolerate larger doses than those who are treated as out-patients. Early cerebral syphilis requires single doses up to 0·25 g. (0·75 g. weekly and a total dosage of 4 g. and more). In cerebro-spinal syphilis, and syphilis in which the serum reaction is positive, the highest single dose should be 0·2 g. (0·4 g. weekly and a total dosage of 3–4 g.). In tabes a careful dosage is necessary, 0·15 g. being the highest single dose (0·3 g. a week and 2–3 g. as a total dosage). The effect of silver salvarsan on the patients' subjective symptoms was very good, and surpassed that seen with salvarsan and neo-salvarsan. Unpleasant symptoms from the use of the new drug were not observed. Dreyfus concludes that silver salvarsan is superior to other preparations of salvarsan in syphilitic disease of the nervous system. It appears from his work to be of special value to the neurologist, as it enables him to treat his patient more energetically without being compelled to combine salvarsan with mercury, which in cerebro-spinal syphilis frequently, and in tabes almost invariably, is badly tolerated.

Sir Donald MacAlister, K.C.B., President of the General Medical Council, has been invested by President Poincaré with the Cross of Commander of the Legion of Honour.

AT the Royal College of Surgeons of England Sir John Tweedy will deliver the Thomas Vicary lecture on the Surgical Tradition at 5 P.M., on Wednesday, Dec. 3rd. On Thursday, Dec. 11th, at the same hour, Sir Charles Ballance will deliver the Bradshaw lecture on the Surgery of the Heart.

[1] Medizinische Klinik. 1919, xv., 806.

BRITISH ORTHOPÆDIC ASSOCIATION:

ANNUAL MEETING.

THE annual meeting of this Association was held in the rooms of the Medical Society of London on Nov. 14th, under the presidency of Mr. E. MUIRHEAD LITTLE.

President's Address.

The PRESIDENT, in the course of a short opening address, said that for years to come the orthopædic surgeon would have to treat the injured and crippled pensioner and the remote results of wounds and disease incurred in or near the fields of battle. It would be the duty of members of this Association to continue to lead surgical opinion on these matters. How far would the methods found useful in the treatment of recent war injuries be applicable to the surgery of peace? In the treatment of compound gunshot fractures of the long bones in the special surgical hospitals it had been found generally possible, with improved methods at disposal, to do away with all shortening not due to actual loss of bone. He had been told that in some cases the limb had been even unduly lengthened by traction. It was probable that the extensive damage to muscles, which was so common in gunshot injuries, was the factor which had facilitated these results. He asked whether equally good results would be possible in the treatment of fractures in civil life by similar methods. This question would have to be answered by orthopædic surgeons, so that the conditions governing success and failure might be properly estimated and the reputation of civilian surgery maintained. In the years ahead, the stumps of the survivors of some 50,000 wearers of artificial limbs would offer cases for treatment, and if the operations introduced by Vanghetti, and the special prostheses for them proved of practical value, a host of operations would be necessary to kinematise many of these stumps. The problems involved in the operative treatment of the disabilities resulting from spastic paralysis needed discussion and elucidation. We did not yet know how many cripples there were in this country, and it was most desirable that a census should be undertaken. A large number of our cripples had hitherto failed to receive effective treatment on orthopædic lines, and it appeared quite certain that with the assumption by the Government of greater responsibility for the public health, there would ensue an increase in the facilities for treatment throughout the country, and a corresponding increase in the number of surgeons interested in orthopædic surgery, all of whom should be members of the Orthopædic Association.

Discussion on Kineplastic Amputations.

A number of illustrative cases having been shown, the PRESIDENT, in opening the discussion on this subject, said former methods of producing movements in artificial hands and fingers depended upon efforts made by the upper arms and shoulders: an elaborate example of this was seen in the Carnes' arm. Vanghetti had performed many operations on fowls, and during the last 20 years his writings had stimulated surgeons to put his principles into practice, in which connexion he referred gratefully to Professor V. Putti's lecture published in this country last year.[1] The various kinds of motors could be divided into the "club" and the "loop." In the former class were the motors which were meant to be connected with the prosthesis by their peripheries, and in the loop class were those connected by their inner and more central surfaces. He described the desiderata of a plastic motor, remarking that in his somewhat limited experience the club motor with osseous nodule in the end gave the greatest promise of usefulness; it was better fitted to stand the pressure of the attachment than was the tunnel, and it could be better planned to stand a large range of movement. The amputation sites suitable for cinematisation were: First, those so close to a joint that the segment below the articulation was of no use for working a socket. Secondly, stumps which were too long after amputation through joints could well afford to lose an inch or two to make plastic motors.

Major ALWYN SMITH, who is responsible in South Wales for military orthopædic cases, pointed out the great importance, especially in such a district as his, of keeping industrial efficiency in mind when planning an operative procedure.

[1] THE LANCET, June 8th, 1918, p. 791.

Major M. FITZMAURICE-KELLY said the orthopædic surgeon had to be guided in every case by his particular material. His experience had been that, whenever it could be got, a clava type of motor was by far the best. He detailed his reasons for that statement. Club motors, he considered, had the best chance of surviving, for there was a concentration of the whole power of the muscle at one point, whereas in a tunnel there was hampering by adhesion of muscle or tendon with consequent reduction of power. In club motors the range was greater. He did not think that a prosthesis could be successful until the forces were surgically produced for the instrument-maker to apply. Orthopædic surgeons must solve the surgical problem and leave the mechanical problems to the engineers.

Mr. A. S. B. BANKART related two failures he had had through operating on too small a scale, and he was anxious that others should benefit from his experience. Large flaps must be used and considerable masses of bone taken away in planning a properly formed motor.

Captain MAXWELL (chief arm instructor, Ministry of Pensions), though not a surgeon, spoke of his experiences and hopes as one who had lost an arm many years ago and as an officer with a wide experience of casualty clearing station practice in the war. He referred with great regret to the large number of cases in which, in the early days of the war, men were fitted with the artificial arm as soon as it was ready, and at once turned into the world to do their best to earn their living again, without having been given any instruction as to its use or limitations. He urged a close consultation between surgeon and limb-maker, with the view of effecting small improvements as they appeared to be practicable.

Mr. ROWLEY BRISTOW said the great lesson brought back by those who visited Italy was the need for these cases to be segregated in orthopædic centres or hospitals in touch with the special surgical and mechanical opportunities.

Habitual Dislocation of the Shoulder-joint.

Mr. R. OLLERENSHAW opened the discussion by reading a membership thesis upon four cases in which conservative treatment had been attempted before he saw them. The operative treatment resolved itself into three methods: (1) pleating the capsule; (2) ex-section of a portion of the antero-inferior aspect of the capsule and narrowing it by overlapping the edges; (3) the deltoid flap operation. He considered the muscle flap operation as the best of these, because it provided a good sling bracing the head and neck of the humerus, and a muscular sling which contracted actively when the rest of the deltoid was in action. He described the conditions found in the four cases, and regarded the recurrence of dislocation as primarily due to a loss of muscle balance in the musculature controlling the joint, with some capsule laxity. He had not had any recurrences in his four cases, but would make a later report on them.

Captain N. DUNN said he had had the opportunity of carrying out different operations for recurring dislocations of the shoulder, and in many cases excision of a portion of the capsule was followed by recurrence of the dislocation. In one very obstinate case a Claremont was done, and he did not think there was a recurrence. In one case sepsis supervened, but the after-result was quite good.

Mr. HARRY PLATT (Manchester) said that in one case his deltoid flap was too thick and too short, the latter probably because he did not take the insertion down to the bone.

Amputations of the Foot.

Mr. S. T. IRWIN read a paper—also a membership thesis on this subject—in which he said that he had been struck in his work in the Limbless Department of the U.V.F., Belfast, by the difficulties in fitting cases of partial amputation of the foot, by the impossibility of giving even moderately useful appliances, and the consequent frequent re-visitations of patients for adjustments. He divided the subject into the following heads: (1) Amputations of the toes; (2) Amputations in the foot proper, with special reference to Lisfranc's and Chopart's amputations; (3) Amputations in the vicinity of the ankle, with special reference to Syme's amputation; (4) Capacity for work after these amputations. Under the first heading he said that where relief could be obtained with retention of the toe, as in hammer toe, by excision of the joint, it was better surgery to retain the toe, especially the great toe. No amputations in the lower limb gave more disappointing functional results than did partial amputations of the foot—they were only suitable as primary amputations where conservatism was of the first importance. The main objection was that the anterior pillar of the antero-posterior arch of the foot was shortened, so that the weight of the body acted through the centre of the ankle-joint, while the support acted downwards through the posterior pillar of the arch, producing a complete rotation round a transverse horizontal axis lying behind the ankle-joint. Hence the heel moved upwards and a potential equinus resulted. The more the anterior pillar of the antero-posterior arch was shortened the worse the result, the greatest disablement following the amputation through Chopart's joint. The scar, at first placed anteriorly, became progressively lower, until eventually it lay on the ground. Deformities and disabilities secondary to amputations in the foot could be combated to some extent by division of the tendo Achillis, by suture of the extensor tendons to the plantar fascia, and by producing ankylosis of the ankle-joint, but none of these measures produced satisfactory results, and the best course was to re-amputate and convert a partial into a complete amputation of the foot. Chopart's and Lisfranc's operations should not now, he considered, be performed. Of the operations through the ankle-joint, James Syme's he regarded as *facile princeps*, and gave reasons for his opinion. There were objections to Pirogoff's amputation. He exhibited a graph to indicate how the functional result varied after amputations in the lower limb. In a general way there was a fall in capacity for work as the stump became shorter, but there were secondary irregularities of great importance which should influence the choice of operation for a particular case. The chief variants were (1) the value of the ideal amputation at the given level, (2) the type of prosthesis appropriate to the amputations. Comfortable progression and capacity for work were diminished by amputation of the great toe; loss of other toes did not generally produce disability, though, if possible, they should be retained. After a Lisfranc there was a marked drop in the capacity curve, due to the shortening of the anterior portion of the arch and its consequent flattening, while the secondary changes were of even greater importance, due to the muscular action in trying to prevent deformity. There was a still further drop in the curve with Chopart's amputation; there was complete removal of the anterior pillar of the arch, with sequelæ which the author detailed. After a Syme amputation, however, there was an abrupt rise in the capacity curve, for it left a stump nearly perfect.

The PRESIDENT congratulated the author on the thoroughness with which he had dealt with the subject, and was glad to find the results of later investigations bore out the recommendations of the surgeons at Roehampton, on which the Memorandum issued by the War Office in April, 1916, was based. Those surgeons arrived at the conclusion that if one could not amputate in front of the anterior metatarsals it was of no use to do anything in front of a Syme. His own site of election would be the middle of the leg—i.e., higher than Mr. Irwin's site.

Major ALWYN SMITH, Mr. D. MCC. AITKEN, and Mr. P. J. VERRALL joined in an interesting discussion.

Birth Paralysis.

Mr. H. A. T. FAIRBANK opened a discussion on this subject, his remarks being illustrated by tables and a number of slides. In Thomas and Sever's 471 cases the sexes were about equally divided; the right arm was affected in the proportion of 3 to 2 on the left. Labour in these cases had usually been difficult, though in some it was normal. There were four head presentations to one of breech. He proceeded to discuss the prevalent theories of causation, and said the traction theory best explained the condition in most of the cases, and that the subluxation of the shoulder-joint developed gradually as a direct result of the paralysis. He elaborated eight separate reasons for this belief. The pathological lesion varied from a slight tear in the perineural sheath to complete rupture of the nerve trunk. In some cases the lesion was quite close to the spinal cord, or the cord itself might be injured by the nerves having been pulled out by their roots. Three clinical types were recognised: the upper arm, the lower arm, the whole arm—the first being by far the commonest. In treating the

palsy he always put the arm up with right-angle abduction and full external rotation of the shoulder, flexion of the elbow to a right angle, full supination, and if necessary dorsi-flexion of the wrist. He used a splint made of tin, and twice daily the arm was taken down for massage and manipulations. The paper discussed the length of time after which operation should be attempted and the procedures to be followed, considerable attention being devoted to the treatment of subluxation of the shoulder.

Mr. PLATT dealt particularly with the type of lesion present in cases of birth paralysis. He pointed out that up to 1913 the conception of birth paralysis as a supra-clavicular injury held undisputed sway. Since that date investigations of various American and continental authors had thrown some doubt on the correctness of this theory. At the present time, he said, there were two schools. The first considered that all cases of birth palsy were due to supra-clavicular lesion of the plexus, while the second school thought there was a primary injury of the shoulder-joint capsule, with secondary involvement of branches of the brachial plexus in close relation to the joint. He pointed out that there was a certain amount of evidence in favour of the inclusion, under the heading of birth palsy, of two distinct types of lesion. Spontaneous recovery occurred in the vast majority of these cases, only a few needing exploration of the plexus. Posterior subluxation of the joint dominated the whole clinical picture of birth paralysis, and presented a problem for treatment in the majority of cases which presented themselves to members of the society. Out of 23 cases he had seen personally there was spontaneous recovery in 20. He advocated conservative treatment in all cases for at least 12 months, the arm being fixed in the standard posture, with relaxation of the affected muscles. Exploration of the plexus should be reserved for cases which presented no recovery after this period had elapsed, and which showed the definite muscle atrophy characteristic of a complete nerve lesion. The posterior subluxation of the joint could be avoided in all cases if the standard position of splinting were adopted. In 17 operations the condition was reducible by manipulations, and in only 6 was open operation needed after the method advocated by Mr. Fairbank.

Mr. ROWLEY BRISTOW did not agree with operating in three months, at which period it was operating for diagnostic purposes. He believed in delaying operation until the very last, for at least a year or 18 months. He had found the electrical reactions of but little service to him in these cases.

Mr. R. C. ELMSLIE spoke of the need for orthopædic surgeons to make up their minds on this subject. The nerve theory seemed to him to fall in very well with clinical observations in tracing and following these cases. The cases of birth palsy seen in early infancy fell, clinically, into three groups: those which recovered very quickly, in many cases without treatment; those recovering more slowly, from three to twelve months; and those which either did not reccover at all, or else only partially. He believed the last-named scarcely existed, they were so very few. Those three groups fell in very well with three presumed pathological conditions: (1) that in which there was injury to the nerve not involving rupture of axis-cylinder; (2) in which the nerve injury involved axis-cylinder rupture; (3) a condition of injury of axis-cylinders, with degeneration of their ends. Cases of subluxation of the shoulder he regarded as nerve lesions, with a tendency to recover more or less rapidly, the slowly recovering cases ending in contracture. In these cases he always put the arm in the standard position. He thought the functional loss of the use of the arm was mostly due to lack of external rotation, and for that reason he had used external rotation in the abducted position. He thought highly of Mr. Fairbank's operation.

Mr. G. R. GIRDLESTONE advocated the complete exposure of the brachial plexus with division of the clavicle, placing thus the whole plexus under observation; this method also resulted in more mobility of the ends.

Mr. AITKEN expressed his agreement with the principles laid down by Mr. Elmslie as to treatment; but he had never yet performed the open operation for subluxation or extreme internal rotation. He discussed fifth and sixth nerve root hæmorrhages.

Mr. W. H. TRETHOWAN gave a short demonstration on the use of silk to replace crucial ligaments; he considered the method promised well for arthroplasty in the knee.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Incidence of Tetanus in 1918.

STATISTICS of the Service de Santé for the war period are being gradually published. The incidence of tetanus for 1918 was markedly lower for hospitals within and without the army zone than in the early days of the war. This improvement is attributed partly to the earlier and more systematic injection of serum and its provision even at casualty clearing stations. It was also due in part to the more speedy evacuation of the wounded, better surgical technique, and more systematic removal of all foreign bodies. Serum injection has not only diminished the number of cases of tetanus, but also has so modified its form as to retard and localise its appearance. The experience gained in the course of the last year of the war has also improved the technique for the inoculation of the same soldiers when surgical interference again became necessary.

Tumours of the Posterior Cranial Fossa.

The Société de Neurologie of Paris has received an interesting communication from Dr. Christiansen, of Copenhagen, on the results of 23 operations for this condition. All the patients were at first treated for cerebral compression and had a serous meningitis, producing isolated symptoms which led to a wrong diagnosis of the position of the tumour in nearly every case. According to Dr. Christiansen, even Bárány's functional tests are liable to fail. In a third of the cases the diagnosis of the otologists was proved wrong. Incidentally the operative results were lamentable. Four-fifths of the patients died and a large proportion of those who survived remained invalids. The trans-labyrinthine method of operation used is irrational, because the diagnosis of a tumour in the ponto-cerebellar angle in an early stage is often impossible inasmuch as a good view of the field of operation cannot be obtained, and lastly, because the facial nerve, which is not usually affected at the onset of the disease, is necessarily cut in this method. It is better to confine operative interference to a simple decompression in order to let out serum, and not to attempt removal of the tumour except in those cases in which symptoms are unrelieved by the decompression.

The Extension of the Faculty of Medicine.

The accommodation in the existing buildings of the Faculty of Medicine being no longer adequate for teaching purposes, 5½ of the 8½ million francs voted by Parliament for its extension have been allocated to the purchase of a new site in the rue de Vaugirard. The remaining 3 million francs will be used to enlarge the hospital services connected with clinical instruction. The purchase includes the two Jesuit colleges already in existence on the site; these buildings are large, well lighted, and already adapted for teaching purposes. The smaller was used during the war as a hospital, financed by the Government of Brazil, and fitted out regardless of cost. Rumour suggests that the Brazilian Government may present the fittings to the Faculty, and, if so, it could be used for clinical teaching purposes as it stands. The larger college, till now used as a military hospital, is to be made into an institute of hygiene and experimental medicine and surgery. The only disadvantage is the distance of the new annexe from the main Faculty buildings, but no suitable site could be found nearer.

The Closing of the School of Re-education.

A school for the re-education in suitable professions and trades of those crippled in the war was founded in July, 1916, and after over three years' work closed its doors on Oct. 31st. The school during this period trained altogether 3000 men for some 20 diverse occupations, and a considerable number of them found employment direct from the school. A wealthy American (Mr. E. T. Stotesbury, of Philadelphia) was responsible for its maintenance, and it was run on admirable lines under the medical direction of Major Hubert Kresser, with the lay assistance of M. Louis Asscher and Mr. Walter Berry. Over and above those pupils who were placed in remunerative employment, there are others who are banding themselves together in a coöperative productive society comprising different trades, and it is confidently hoped that the venture will prove successful.

Milk Shortage.

Paris is more short of milk than at any time during the war. The diminution of supply is influenced by much the same circumstances as in your country, with the additional factor of the destruction of cattle in the regions invaded by the enemy. The dry summer, causing a rise of prices in animal foodstuffs; the prevalence of cattle disease; the high prices obtained for certain luxuries derived from the constituents of milk; and the greed of certain profiteers, are a few of the conditions which have created the present anxious situation. The authorities are coping with the situation by forbidding the consumption of fresh milk and cream in cafés, and possibly the provision of milk in whatever form in such places will have to be stopped. Cream cheese is so popular and expensive a delicacy that the manufacturers thereof are able to outbid the milk-shops, and some regulations to prevent its manufacture and sale should be made.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Bengal Public Health.

A RESOLUTION of the Government of Bengal on the recommendations of the Public Services Commission regarding the Sanitary Department states that the question of a well-organised public health service is of the first importance. The municipal boards of the Presidency have already appointed qualified medical officers of health or sanitary inspectors. A medical officer of health will shortly be added to the staff of each district board. There will thus be the nucleus of a trained public health service. The appointment and recruitment of this staff, on which depends the sanitary progress of Bengal, raises, says the resolution, three important questions—namely, the manner of selecting and appointing of public health officers, their status and conditions of services, and the sources of recruitment for higher posts. In reference to the first the Governor-in-Council contemplates the formation of an Advisory Board of Health composed entirely of experts, and containing a strong Indian element. Regarding the second, it has been proposed that there should be in each province a general cadre from which local bodies should, through the medium of the Advisory Board of Health, obtain their medical officers, whose appointment, promotion, suspension, or dismissal should rest with this advisory board. Regarding the third, facilities should be provided to enable natives of India to obtain diplomas in public health and instruction in hygiene without going to Europe. Courses in public health have already been established to help the recruitment of trained sanitarians.

Housing in Madras.

The public health of the city of Madras in recent years has been by no means satisfactory. Despite the vigorous and vigilant measures adopted by the health officer of the corporation no perceptible improvement has been established, and the average death-rate is not only exceedingly high but far higher than it ever was in the past. Apart from the epidemic outbreaks, the growing increase in population and want of adequate number of proper and sanitarily built houses to meet this growing demand has had a prejudicial effect on the city's health.

Labourers' Dwellings in Ootacamund.

The Municipal Council of Ootacamund has decided that in view of the unsatisfactory conditions under which many of the servants and labouring classes are now housed, and in view of the recent outbreak of influenza and the prolonged prevalence of small-pox, its first and imperative duty is to make provision for housing at least 500 of these classes in sanitary dwellings situated in localities where they are most needed.

The Governor of Bengal has opened new waterworks at Goalando.

Oct. 25th.

ST. MARY'S HOSPITAL.—The past and present students' annual dinner will be held on Friday, Jan. 9th, 1920, at 7 for 7.30 P.M., at the Connaught Rooms, Great Queen-street, London, W.C. The chair will be taken by Sir Almroth Wright, K.B.E., C.B.

MEDICINE AND THE LAW.

The Legalisation of Abortion.

THIS summer a Bill, introduced by Dr. Welti, passed its first reading before the senior council of the canton of Basle city. The Bill contained the following provisions: Abortion shall be without penalty, in matrimonial pregnancy if both partners are willing, in extra-matrimonial with the consent of the female one, provided that the fœtus is not older than three months, and that the procedure is carried out by a qualified medical man. Labhardt,[1] discussing this measure at a meeting of the Basle Medical Society, raised the following objections to it. First, that as drafted it does not favour abortion only on social or economic grounds, but opens the door to the practice in the absence of good reason. Secondly, the risk to the mother, even in the most skilful hands, is real, so that the practitioner is forced to take upon himself no slight personal responsibility. Thirdly, abortion might be induced repeatedly, perhaps twice or thrice a year, in the same woman, leading inevitably to uterine disorders and disturbance of the general health. Fourthly, the difficulty of determining whether or no the three months' limit had been passed. Fifthly, the encouragement to sexual licence. And lastly, the likelihood that Basle would become the resort of undesirable foreigners from all parts seeking abortion, so that the prestige of the local medical profession would suffer. The author adds that a referendum of 59 Swiss patients at a women's hospital resulted thus: for, 5 married and 5 single; against, 41 married and 8 single.

The question of abortion for non-medical reasons has an interesting history. Ancient Greece and Rome allowed it; Aristotle spoke for it, and the Roman law laid down that a fœtus became a human being only at birth. Christianity, on the other hand, strongly condemned it, probably following old Jewish ideas. In modern times, although not overtly, action, and perhaps ethical feeling, have, as a fact, reverted somewhat to the classic view. The feminist movement on the continent has been known to favour it, making the claim that the products of conception, being contained in the woman's body, were as such her exclusive property, and should be under her exclusive control. Dr. Welti's measure is obviously dictated by the economic difficulties under which Europe at present labours as the result of the war, but the medical and medico-legal objections set out above appear to us to be undeniable.

A Question of Privilege and of Prudence.

In an action recently tried by the Lord Chief Justice, Miss M. R. Maunders, a nurse, sued Mr. C. Ingleton, a member of the Sheppey rural district council, for slander. The defendant was at that time a member of the board of guardians and the plaintiff had been superintendent nurse at Sheppey Union Workhouse Infirmary. In 1914 she remained there as nurse under the military authorities in what became a military hospital managed by the board of guardians. In 1917 a question was raised by the guardians as to Miss Maunders having attended an officer's wife in her confinement, in consequence of which she resigned her appointment, and a few months later Mr. T. Wigglesworth, medical officer to the Sheppey board of guardians and to the district council, being well acquainted with her capacity and the work she had done, asked her to take charge of the council's isolation hospital. The evidence given showed that the plaintiff had not obtained the three years' hospital certificate, but held a midwifery certificate obtained in 1912. It was also suggested there had been complaints of lack of discipline among the military patients at the infirmary and an altercation between herself and the master. At a meeting of the district council in January, 1918, in a discussion arising out of the plaintiff's appointment by Mr. Wigglesworth to the isolation hospital, the defendant was alleged to have used the words, "She is not a fit and proper person to take charge of the fever hospital." The following questions were put to the jury by the Lord Chief Justice: (1) Are the words defamatory? Answer: Yes. (2) Has the plaintiff satisfied you that the defendant was actuated by malice? Answer: No. His lordship, in the absence of malice, held that the occasion was privileged, and entered judgment for the defendant, with costs.

[1] Zeitschrift für Sexualwissenschaft, October, 1919.

The Everitt Divorce Case.

In this case the wife of Major S. G. Everitt sued for a judicial separation from her husband on the ground of his alleged cruelty, and Major Everitt petitioned for a divorce from his wife, alleging that she had committed adultery with Mr. J. L. Whatley, a medical practitioner who had attended her professionally and had also been on terms of social intimacy with her and with her husband. The case ended on Oct. 31st in the jury finding that Major Everitt had not been guilty of cruelty, and that neither Mrs. Everitt nor Mr. Whatley had been guilty of adultery, and in the dismissal of both petitions accordingly. It is not necessary to recapitulate either the evidence upon which Mrs. Everitt sought for a judicial separation from a husband many years older than herself, with whom she had undoubtedly had unhappy relations for some time, or upon the evidence adduced to prove that the wife had been unfaithful; but it should be mentioned that Mr. Justice Shearman pointed out in his summing up that there was evidence that the co-respondent had been possibly foolish and indiscreet in the frequency of his visits, but that there was an absence of anything clandestine about his conduct, and no evidence leading directly to the question at issue, as, for example, of kissing or of affectionate letters. In these circumstances we may congratulate Mr. Whatley and the Medical Defence Union, which conducted his case, upon the result of a long and anxious trial, and a verdict which exonerates him completely from one of the most serious accusations that can be brought against a medical man. At the same time the prolonged ordeal to which this medical practitioner was subjected is not without useful lesson. It is impossible to ignore the fact that there was imprudent conduct, not rendered less so by the disparity of age and lack of harmony existing between Major and Mrs. Everitt. Indeed, at the close of the trial an application was made to deprive Mr. Whatley of his costs, on the ground that his conduct was responsible for his position in the suit. This was refused by the learned judge, who held that the co-respondent, having been exonerated by the jury, was entitled to the usual result of such a verdict, and even if it had been granted it would have implied no more than that his conduct had been rash and unwise. In the medical profession, however, rashness and imprudence are out of place. The three learned professions—medicine, the law, and the church—bring their members in the exercise of their functions into contact with many persons of the other sex, closer and more intimate than they would enjoy merely as social friends or neighbours. This is particularly the case in medical practice. No one would wish to deny to medical men, young or old, the friendship and social intercourse freely open to others, nor to see them leading dour and austere lives. At the same time there is a certain dignity expected, or may we say demanded, from every member of a learned profession, which he must exercise if he wishes to be regarded as taking his calling seriously.

Prescriptions and Profiteering.

The decision of the Divisional Court on the question of law arising out of the prices quoted by Messrs. Boots Cash Chemists (Southern), Ltd., and Mr. Coulter, a druggist, for the dispensing of a prescription is one of some importance. The court held, to put it briefly, that when medicine is made up in accordance with a prescription and handed to a purchaser in return for a price, the transaction is a sale coming as such under the Profiteering Act, 1919, being the sale of a drug or "medicinal preparation," to which the Act is applied by an Order of the Board of Trade of Oct. 14th, 1919. The argument put forward on behalf of the druggists was that the Wood Green Profiteering Committee had no jurisdiction to consider the complaint as to an alleged unreasonable charge, because the making up of a prescription was in its nature a service rendered and not a sale. As to this, the Lord Chief Justice said, in his judgment, that if the court were to give effect to it, the result would be to make the Profiteering Act of no value whatever. If that argument were allowed to prevail the Act could only have a very limited application, because there were few articles sold the price of which did not include something for services rendered. This, of course, was no reason why the court should decide against the applicants. The case must be judged on the natural meaning of the words of the Act, and he had no doubt, on the natural meaning of the words of the Act, that the sale of a bottle of medicine made up from a prescription was the sale of an article. This judgment, it is to be observed, is final and not liable to revision on appeal to any higher court. Any change in the law making any special exemption of charges for prescriptions from investigation by profiteering committees would have to be by Act of Parliament, or rather by a fresh Order of the Board of Trade, modifying the one referred to, which, to give it in full, applies the Act to "all drugs (excluding quinine sulphate, which is controlled) and medicinal preparations, including tooth-powders, talcum powder, and fuller's earth." The result of the judgment is to enable a profiteering committee to go into the cost of, and the charge made for, any medicine "sold," whether by a druggist or by a medical man who makes up his own prescriptions. The committee need not condemn the price as unreasonable merely because there is a substantial difference between the price of the materials and that asked of the purchaser, and, no doubt, committees, as a rule, will be found anxious to act justly towards the vendor of the "medicinal preparation" as well as to the public, in the interest of which they have been brought into being. It is possible, however, that they may not fully appreciate the question involved, which cannot be summed up by saying that a fixed percentage upon the cost price of the drugs when sold to the compounder should suffice for his profit. The question is one which affects the public intimately, for it is to the public interest that prescriptions should be prepared by thoroughly efficient persons, and anything like vexatious proceedings and harassing restrictions may have the effect of seriously diminishing the numbers of those willing to dispense at all.

URBAN VITAL STATISTICS.

(Week ended Nov. 15th, 1919.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at 16,500,000 persons, the annual rate of mortality, which had been 13·7, 12·9, and 13·4 in the three preceding weeks, rose to 13·9 per 1000. In London, with a population slightly exceeding 4,000,000 persons, the annual death-rate was 14·2, or 0·9 per 1000 below that recorded in the previous week, while among the remaining towns the rates ranged from 6·0 in Cambridge, 7·6 in Norwich and in Warrington, and 7·7 in Tottenham, to 21·5 in Hastings, 22·1 in Sunderland, and 23·2 in Exeter. The principal epidemic diseases caused 232 deaths, which corresponded to an annual rate of 0·7 per 1000, and comprised 73 from diphtheria, 68 from measles, 52 from infantile diarrhœa, 20 from whooping-cough, 14 from scarlet fever, and 5 from enteric fever. Measles caused a death-rate of 1·7 in Derby, 1·8 in Tynemouth, 2·2 in Sunderland, and 2·6 in Gateshead. The deaths from influenza numbered 74, against 71 and 56 in the two preceding weeks, and included 22 in London, 4 each in Manchester and Salford, and 3 each in West Ham and Bradford. There were 2678 cases of scarlet fever and 1478 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 2540 and 1433 respectively at the end of the previous week. The causes of 35 deaths in the 96 towns were uncertified, of which 7 were registered in Birmingham, 4 in Liverpool, and 3 each in London, Manchester, and Sunderland.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality, which had been 11·1, 12·4, and 13·1 in the three preceding weeks, fell to 12·6 per 1000. The 282 deaths in Glasgow corresponded to an annual rate of 13·1 per 1000, and included 14 from infantile diarrhœa, 7 from measles, 5 from diphtheria, and 3 from scarlet fever. The 77 deaths in Edinburgh were equal to a rate of 11·9 per 1000, and included 3 from diphtheria.

Irish Towns.—The 105 deaths in Dublin corresponded to an annual rate of 13·5, or 0·8 per 1000 above that recorded in the previous week, and included 5 from infantile diarrhœa and 1 each from measles and scarlet fever. The 147 deaths in Belfast were equal to a rate of 19·1 per 1000, and included 5 from scarlet fever and 2 each from measles and infantile diarrhœa.

A NEOLITHIC SKELETON.—Prehistoric remains recently unearthed in Wiltshire have been deposited at the British Museum for expert examination. Together with portions of a human skeleton, belonging to the neolithic period, are a good specimen of a flint spearhead and fragments of a crudely ornamented urn of a red non-fictile ware.

MEDICAL PRESENTATION.—By public subscription Dr. F. M. Blumer, the new Mayor of Stafford, has been presented with a large silver tray bearing the following inscription: "Presented by friends and colleagues of Dr. Frederick Milnes Blumer, B.A., M.B., C.M. Edin., on his relinquishing the position of medical officer of health for Stafford, after 33 years' meritorious service, 1886–1919, and as a mark of appreciation of his untiring efforts for the well-being of the inhabitants of the borough." The presentation was made before a large and representative gathering in the Borough Hall on Nov. 10th.

Correspondence.

"Audi alteram partem."

PREVENTION OF VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR,—In the long essay by Dr. Douglas White on theory and experience in this matter, published in THE LANCET of Nov. 8th, there is much of the former, but very little of the latter; and this practically consists in a statement of Colonel L. W. Harrison's views contained in a space of not much over a paragraph. The rest of the four columns set forth only the opinion of the writer and, perhaps, of others who agree with him, and it is notable that in the beginning he employs the method, not uncommon in controversy, of giving his own interpretation of the statements of those opponents from whom he elects to quote. Thus, in making an extract from what he names an "influential letter" to the *Times* of Jan. 2nd, 1919, he boldly affirms that the sentence "extraneous considerations can have no place in *sanitary* problems" means that "social ethics and *sexual disease* are independent problems." I do not propose to occupy space in correcting this obvious misinterpretation of the words of another writer whose name is not given by Dr. White; but will give only one other example of what seems to me the over-assumptive and somewhat predicatory method of Dr. White's preliminary dialectic. He says in his opening paragraph that "science is the elucidation of principles which govern physical, physiological, and social processes." This is a very imperfect definition or even description of "science." But let that pass. But how a *method of inquiry* can "interdigitate" with what it inquires into is an insoluble riddle. Dr. White's line of argument seems unduly directed all along towards distracting his reader's attention from the main point and to showing that the advocates of prompt personal disinfection deny that there is any immorality attaching to sexual promiscuity. He must, however, be well aware that what those advocates contend is that to stem the tide of venereal infection much more is absolutely required—and that of a purely medical nature—than moral instruction, however intelligently and persistently offered.

It is abundantly clear that the real point at issue between the honorary secretary of the National Council for Combating Venereal Diseases and those who advocate immediate self-disinfection is whether Colonel L. W. Harrison, the Adviser on Venereal Disease to the Army Medical Service and member of the National Council, is right or wrong in the attitude he now apparently takes in the matter of the medical prevention of venereal infection; and I base this statement to a great extent on the last paragraph of Dr. White's article, headed "Conclusion." He says there that "if the Army Medical Department were prepared to give a full analysis of their experiences they would throw invaluable light on the road we have to travel," &c. I think that such an analysis, provided it included a strict and full account of the exact method and scale on which the instructions to soldiers and the facilities afforded for self-disinfection were carried out, much more light could be thrown on what was really done in this matter than is at present available; but I doubt much that any fresh light would be thrown on the main question between immediate and delayed disinfection. What has stood in the way of obtaining valuable sets of statistics on a large scale, or more than a few records of any thorough and wide trial of disinfection in the army or elsewhere, has been the primary influence of a prevalently hazy and incomplete conception of what the moral side of this great question really is. This has helped largely to render most army records of little use on account of the necessarily vague and jejune character of the available reports. High authorities have done their best to stifle or discourage the medical disinfectant procedure, and even such reports as do show the high efficacy of self-disinfection coupled with proper instructions, have been conveniently set aside, as is well known, and irrelevantly called "exceptional."

With one remark made by Dr. White concerning moral teaching in this context I quite agree. "Morals (by which I assume he means teaching of morals) have been found wanting." "But," he adds, "they have never been tried intelligently; never up to the other day, as it were, has there been a serious attempt to give deliberate and rational instruction to the youth of this country on sexual ethic or hygiene." This is doubtless a very deplorable truth. But all "morals," to be taught effectually, must be properly taught to the *young* early. It is the early moral teaching and experience and example which mainly mould the moral character of the adult. Are Dr. White and those who think with him going to wait for the results of better teaching of children before they stir themselves to do all in their power to prevent contemporary and unteachable adults from continuing to poison others and causing fresh instalments of already poisoned infants to be born, to suffer, and to die, or, mayhap, to be "cured" by "early treatment," while they neglect or discourage the use of means in which Dr. White admits there is nothing immoral?

I am, Sir, yours faithfully,

Nov. 13th, 1919. H. BRYAN DONKIN.

To the Editor of THE LANCET.

SIR,—There are three principal groups of contagious diseases—the surgical fevers (septicæmia, tetanus, gangrene, and the rest), various skin diseases, and the venereal diseases. The problem of disinfection, of prevention, presented by these three groups differs in no way, except that, owing to the shape, size, and position of the penis, the delicacy of the pathogenic organisms, and the fact that the time and manner of infection may almost always be anticipated, disinfection is particularly easy and certain in the case of the venereal diseases. Two methods of preventing contagious disease are in vogue—disinfection with all possible speed after exposure to infection, and disinfection delayed for one, two, or more hours. As far as I am aware, delayed disinfection is practised only in the case of the venereal diseases, and then only by men who are ignorant of how to apply quick disinfection, or by those who have "moral" objections to its employment, or by those who are compelled by superior authority not to employ it. It is remarkable that the people who object to quick disinfection on moral grounds are precisely those who are convinced that it is valueless on medical grounds. It is equally remarkable that whenever (any time within the last ten years) and wherever (Japan, India, South Africa, England) quick disinfection has been practised and the active disinfectants ordinarily used in surgical practice have been employed, the result has always been almost perfect—better far than those achieved by surgeons who prepare patients for operation. It is even more remarkable that these results, which may be verified to the last detail from official records, are never quoted by people (even by people who have official access to the records) who on moral grounds are convinced that quick disinfection is wicked. The British Army furnishes a series of excellent samples. My space is limited, and I need only quote one.

In a large area served by a single venereal diseases hospital both quick and slow disinfection have been extensively practised. For quick disinfection nothing more was found necessary than to tell the men to swab themselves with permanganate of potash (or any other active antiseptic) immediately after exposure. No "packets" were necessary, but the men were given the antiseptic if they asked for it. At the time of my last inquiry, of all the hundreds who had passed through the hospital nearly *every* man had practised slow disinfection and not *one* had practised quick disinfection. At a later period the method of quick disinfection was more extensively applied in this area. Subsequently almost the only cases of disease that occurred within it arrived with men joining station from outside the area and bringing their infections with them.

A Question of Morals.

I wish, someone, Mr. E. B. Turner for choice, would explain the difficult morals of this business to me. Both in the case of quick and slow disinfection the soldier knows the disinfectants are ready for him, and for what purpose; in any case he is led to believe that the means of prevention are effective and the best that science can devise; in the one case he is told the truth, but not in the other; yet it seems it is immoral to tell him to disinfect at once, but quite moral to tell him to disinfect after an hour or two. I wonder what would be the legal position of a doctor who gave that sort of advice in the case of the surgical fevers. Personally I think he should be hanged. In connexion with this ethical aspect of the problem there is a point which appears to me of extreme importance. Children learn about sex and

acquire their moral tone from other children. Most men remember the freedom, even the obscenity, of school-boy discussion. All that children learn from adults is reticence and secrecy. Children therefore are the real teachers of sexual morality, such as it is. After the twig has been bent, after the moral attitude, whatever it be, has hardened, these children, now men and women, are preached at by other adults. But there is the widest difference between real teaching and mere preaching. The latter is usually a mere waste of breath. I am sure if Mr. E. B. Turner and I preached at one another for a month, each could not alter the other's moral altitude, however dreadful it might seem. But it is precisely the preachers who insist, on the one hand, that children shall not be taught, and, on the other, that nothing effective shall be done to prevent their being poisoned later in life. Now, I do not discuss whether children should be taught, but such is my morality, or lack of it, that I do insist that this poisoning is abominable. The fault belongs primarily to the preachers.

In 1906 Metchnikoff published an account of experiments which demonstrated that syphilis could be aborted by the early inunction of calomel. The medical world rang with the discovery, and 10 years later 20 millions of fighting men were being protected by it. In the latter year the Royal Commission on Venereal Diseases issued its report. All that this remarkable Commission had to say of Metchnikoff was that he had inoculated monkeys. Colonel L. W. Harrison gave evidence before it and advised increased facilities for moral lectures and for treating the already infected. It was calculated that there were at that time about 3,000,000 people actually suffering from syphilis in the United Kingdom and, since gonorrhœa is four or five times more common, a good many more millions suffering from gonorrhœa. The Royal Commission accepted his advice and handed the blessed work to the N.C.C.V.D., which has ever since been trying to empty the Atlantic with a teacup decorated with a text. But was ever disease stayed by preaching or abolished by curing?

"Venereal Ablution Rooms."

In 1916 the amount of venereal disease in the army had grown to such vast proportions that the authorities, constrained by the dire need of men, established "venereal ablution rooms"—"early treatment centres"—in which were stored solution of permanganate of potash in pails and calomel cream in pots, and to which the men were supposed to resort after exposure. I understand a bargain was made; the preachers, "influential people," agreed not to raise trouble for the harassed Government provided the packet system was not introduced. In 1917 it was demonstrated to the authorities, who had every means of testing the evidence, that venereal disease, still enormously prevalent, could be almost, if not quite, abolished by advising the men to swab themselves, immediately after exposure, with permanganate of potash, or any other active antiseptic. It was agreed that quick disinfection should be introduced, but delay occurred, and inquiry revealed the amazing fact that the authorities were waiting for the delivery of 4,000,000 bottles and 1,500,000 tubes of calomel ointment. We who were concerned in the matter protested that the tubes were unnecessary, for permanganate had been proved sufficient; that the bottles were unnecessary, for the men had shown themselves willing to find their own bottles; that the bottles and tubes introduced the packet system and gave a handle to the enemy; that delay was unnecessary, for all that was required was a simple order to medical officers to teach quick disinfection; that the need was urgent, for there was a shortage of trained and mature soldiers, and the German offensive was impending; that the expense was unnecessary, for ample disinfectants were already present in every medical inspection room. However, the authorities insisted on transferring the permanganate and calomel from the pails and pots to bottles and tubes. I understand Colonel Harrison was in charge of the arrangements. At last the bottles and tubes arrived and were distributed—*preceded by instructions to use the chemicals in the old inefficient way.* Conceive the imbecility of the whole procedure! I have in my possession a large poster in unbeautiful orange and black exhorting soldiers never to "delay for more than an hour"—inviting them to delay for at least an hour. The "influential people," presumably the N.C.C.V.D. and its clerical backers, had got wind of the affair and had intimidated the authorities. We begged and implored the latter to disregard them and fight the matter openly. We insisted that if the whole truth were made known the nation would sweep the preachers and their tools aside as decisively and with more abiding contempt than it had already swept aside the far less guilty conscientious objectors. Our efforts were unavailing, the authorities were not looking for trouble. The German offensive broke with the results we know. At that time there were, convalescent or undergoing treatment, enough Allied troops to have furnished not an army corps, but a great army, complete almost from trumpeter to G.O.C. Had the authorities possessed the courage of their convictions most of these men would have been in the fighting line.

Quick Disinfection.

As far as I am aware, Colonel Harrison has always opposed quick disinfection. Mr. Wansey Bayly says he advocated it in Edinburgh. The statement is a surprise to me, and I am inclined to believe that what was advised was slow disinfection, but practised as quickly as possible after a moral interval, say an hour or more after exposure—long enough to give the microbes a sporting chance for their lives. Moreover, Colonel Harrison advocates not the active disinfectants used in surgical practice, but calomel, a very slow and feeble antiseptic. Yet, again, he considers self-disinfection dangerous—at a time when, apparently with his approval, the whole British Army is practising it, but slowly. I am sorry to allude to Colonel Harrison by name, but Mr. E. B. Turner quotes him as an authority, and he is continually being quoted by the N.C.C.V.D. and others. It is time to make it clear that he is the very last person who can be accepted as an authority by those who have practised quick disinfection. To the best of my knowledge he has not the smallest personal experience of it. Nearly all the evidence is in his hands, however, and all he has to say of it is "that a definite reduction was attained owing to the energy, wisdom, and tact of the medical officers." It is curious, nevertheless, that the wise, energetic, and tactful officers should all employ this one method.

The Need for Publicity.

I wonder if Mr. E. B. Turner and Dr. Douglas White now understand why the opponents of the N.C.C.V.D. are not eager to meet that body in secret conference. *Timeo Danaos et dona ferentes.* There has been too much secrecy already. If the future is to be made safe, publicity must be shed not only on the present but also on much in the past. Moreover, the contrast in ethical ideals is too sharp, and there is a certain feeling of horror felt, not only by the preachers but for the preachers. Lastly, what have we to gain by a conference? The N.C.C.V.D. is impotent. If we choose to make an item of sanitary information public, it cannot silence us. We have not the least objection to its moral lectures; on the contrary, we should like to see them attended not only by the converted but also by the unconverted. We have not the least objection to its early treatment centres; on the contrary, though we hope to make their work very light, we ardently desire that every syphilitic who escapes our net will attend them.

I am, Sir, yours faithfully,

Southsea, Nov. 16th, 1919. G. ARCHDALL REID.

To the Editor of THE LANCET.

SIR,—In view of the attention which has been drawn to the subject of the prevention and treatment of venereal disease, it may be of interest to your readers to see a copy of the Memorandum which was unanimously adopted at the quarterly meeting of the National Council for Combating Venereal Diseases at the Central Hall, Westminster, on Nov. 10th. The Council affirmed their view that the passage of this Memorandum did not involve any change of policy, and they are as firmly opposed as ever to any general distribution of prophylactic packets to the members of the civil community.

(1) The prevention of venereal diseases is a large socio-medical problem. In the direct line of attack ample facilities for treatment and instruction to the public—both social and hygienic—occupy the first place. Concerning the further question of personal disinfection, after risk taken, our attitude is as follows:—

(2) It is no part of our policy to conceal the truth, and we have always acknowledged the value of cleansing and disinfecting materials applied early and thoroughly in diminishing the risk of disease.

(3) Abstention from exposure to infection is the only certain safeguard against the ordinary risk of disease; continence is to be encouraged by every means and on every ground, both social and hygienic.

(4) No person who has indulged in promiscuous intercourse can be sure that he is not infected, and every such person is, therefore, bound in duty to him- (or her-) self and to society to seek means of cleansing at the earliest moment.

(5) For this purpose a thorough local application of soap-and-water is of great value, followed (if possible) by the use of such disinfectants as may be recommended by a medical practitioner.

(6) While such applications, if properly used, do sensibly reduce risk of disease, if applied within four hours after exposure, they afford no certain security. They do not in the slightest degree prevent the contraction of syphilis on other parts of the body (e.g., lips, face, or hands) than those disinfected. These applications are not suitable for treatment of the disease when once contracted.

(7) The case of women must not be ignored. Satisfactory self-disinfection by them is practically impossible, and skilled medical attention at the earliest possible moment is absolutely necessary.

(8) No one should be urged to arm himself in advance with a prophylactic packet.

(9) It must be insisted on that the question of chemical disinfection is only one aspect of the problem of combating venereal disease.—I am, Sir, yours faithfully,

DOUGLAS WHITE,
Honorary Secretary, the National Council for Combating Venereal Diseases.

Southampton-row, W.C.1, Nov. 19th, 1919.

A LIVING FOREIGN BODY IN THE LARYNX.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 8th (p. 841) there is a reference to an interesting account by Dr. Barthès of a case of lodgment of a leech within the larynx, and a discussion as to the best method of removing such an obstacle to respiration, with arguments in favour of the employment of general rather than local anæsthesia.

In his inimitable style, Dr. Shipley describes in "The Minor Horrors of War," the occurrence of cases of this type, and points out how far back into history those living in the East have had a dread of swallowing leeches. He quotes Mr. Masterman, who, as medical officer in Palestine, had much experience in removing these pests from the air-passages by means of cocaine, which paralyses the leech and causes it to relax its hold. My friend, the late Dr. Mackinnon, who practised for many years in Damascus, has told me with what ease he had, by means of the cocaine spray, been able to paralyse leeches in the larynx, after which they were immediately coughed up; and to my knowledge they have thus been disposed of—to the surprise of the surgeon—in several cases in which their presence was not suspected, and a cocaine spray was being used with a view to laryngoscopy. If I remember rightly, Mr. T. P. Legg removed a fine specimen in Malta when we were there together in 1915.

With so considerable an experience on the part of British observers who are familiar with the condition it may perhaps be concluded that removal by cocainisation is the best and simplest procedure, and that a general anæsthetic is not required. I am, Sir, yours faithfully,

Manchester, Nov. 11th, 1919. WILLIAM THORBURN.

A CASE OF FILARIA LOA.

To the Editor of THE LANCET.

SIR,—Mr. R. R. James's notes on a case of filaria loa (subconjunctival) in your issue of Nov. 15th reminds me of a similar case in 1917 in an auxiliary hospital at Harrogate, of which I made the following notes. Captain M., who had served in the Cameroons, stated that he had been bitten on the back of the neck some nine months previously by a mangrove fly. About six months later he noticed peculiar local swellings, which appeared periodically in various parts of his body. This was diagnosed as many different diseases until he reached a large base hospital, where filariasis was finally discovered to be the cause of the sudden, œdema-like swellings. He was sent to England, where on several separate occasions small wriggling movements had been seen under the skin, and attempts had been made to remove the suspected parasite. One had been removed successfully from the shoulder; other attempts were not so successful, all movements suddenly ceasing at commencement of operations for removal, with total disappearance of the object of search. On this occasion he complained of movements in his left upper eyelid, and was emphatic in his statement that a "worm" was there, which he desired me to "cut out." On careful inspection short, almost regular, and fairly rhythmical movements could be seen simulating the wave of a pulse. An attempt at palpation caused the movements to suddenly cease, and although we waited several minutes they did not return. The patient proffered the suggestion that my manipulations had "driven the worm away." A few hours later he again felt the movements. This opportunity was seized and I wasted no time but cut through the skin over the site of the centre of movement into the subcutaneous tissue; but a fleeting glimpse of something suddenly disappearing was my only reward. We waited patiently for some 10 minutes, when a faint movement was again visible at the base of the incision I had made. A quick thrust with a pair of fine pointed forceps was successful in seizing one extremity of the parasite, which was then gently but forcibly withdrawn. It proved to be a typical female specimen of *Filaria loa*, and measured just a shade over two inches in length.

I am, Sir, yours faithfully,

EDGAR J. TYRRELL.

Pope's Head Alley, Cornhill, E.C., Nov. 15th, 1919.

THE SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—The annual general meeting of the Fellows and Members will take place at the College, Lincoln's Inn Fields, W.C., on Thursday, Nov. 27th, at 3 P.M. Tea and coffee are served immediately after the meeting. We beg to inform you that the following resolutions will be sent in on behalf of the society:—

1. "That this Thirty-Fourth Annual Meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which as now constituted only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation."

This will be moved by Dr. Brindley James, the President of the Society, and Dr. F. W. Collingwood.

2. "That as the Royal College of Surgeons is composed of about 19,000 persons, of whom nearly 18,000 are engaged in general practice, this Annual Meeting requests the President and Council to nominate at least two Members in general practice to represent the interests of general practitioners in the management of College affairs."

Dr. Finucane, Dr. R. Dunstan, and Dr. Redmond Roche will speak thereon.

3. "That the President is hereby invited to make a statement to this meeting as to the views of his Council on the subject of the second resolution."

Dr. A. K. Barrett and Dr. Lewis Lewis will speak.

All correspondence, and annual subscriptions (2*s.* 6*d.*) and donations should be sent to Yours faithfully,

SIDNEY C. LAWRENCE,
Honorary Secretary.

61, Wellington-road, Bush Hill Park, Enfield, Nov. 3rd, 1919.

MANOR HOUSE HOSPITAL.

To the Editor of THE LANCET.

SIR,—With reference to the announcement in your issue of Nov. 15th, as to the resignation of four out of the five members of the medical staff, we, the undersigned, being the members concerned, feel it our duty to lay certain facts before you. The incidents that led up to our resignation were: firstly, the springing upon us of a so-called "Hospital Constitution" (of the existence of which we had no knowledge at the time of our appointment); and secondly, the impossibility of inducing the Committee of Management to reconsider or relax this constitution. The reconstituted staff of this hospital was formed in July last, and the first intimation we had of any attempt on the part of the Management Committee to dictate to us on the question of the election of officers for the Medical Staff Committee was contained in a letter from the secretary to the hospital, dated Sept. 12th, 1919.

The relevant part of this letter reads as follows:—

"It is considered necessary for the senior surgeon of the hospital to be vested with authority to take action in contingent circumstances that are bound to arise. In the past the senior surgeon has been chairman of the Staff Committee, and it was in the belief that the same procedure would be

followed, that Mr. —— was appointed to the Management Committee as the head and mouthpiece of the hospital staff. It is hoped to build up other hospitals upon the model of the Manor House, and my committee will be relieved to hear that your committee has arranged itself upon these constitutional lines."

Regarding this as an unwarranted encroachment upon our privilege, the senior surgeon was not appointed, notice being given of our action.

We ought to mention that prior to the receipt of the above letter the medical staff, in committee, had made certain recommendations, among them being that there should be two representatives from their number on the Management Committee, it being understood that the senior surgeon was "ex-officio" a member. To this recommendation the hospital secretary wrote (Sept. 4th) that one of us (Dr. Melville) had been unanimously appointed as an additional member of the Management Committee. At a meeting of the Management Committee, held on Oct. 9th, a written constitution was produced, and a copy of this, together with a covering letter from the secretary, dated Oct. 11th, was sent to the secretary of the Medical Staff Committee. The extract from the above letter reads as follows:—

"It would appear that some members of your committee are in ignorance of the constitution of this hospital, although its salient features were indicated in my letter of Sept. 12th, and I am instructed to forward the same to you in writing. My committee are not prepared to depart from this constitution, which has existed since the opening of the hospital, and I am to request your committee to conform to its regulations. I am to add that the Committee of Management was unanimous in its resolutions."

The following is a copy of the "Hospital Constitution":—

"1. There shall be a Medical Staff Committee, whose duties shall be to consider questions relative to the medical affairs of the hospital, and report thereon to the Committee of Management. 2. The Staff Committee shall be composed of the active members of the staff of the hospital, subject in respect to each particular office, to the ruling of the Committee of Management. 3. The senior surgeon of the hospital shall be the medical representative on the Committee of Management, and, as such, chairman of the Staff Committee. 4. The Staff Committee shall meet at least once a month, three members forming a quorum. 5. The secretary of the Staff Committee shall convene meetings, issue agendas, keep minutes, and report, as necessary, to the Committee of Management."

This document was duly considered by us, and the Management Committee were pressed to meet the medical staff in the hope of coming to some agreement. This meeting took place but failed in its object, with the result that the only possible course left was for us to hand in our resignations. This step we took, and our resignations were accepted. We have no wish to open a controversy, or to do other than place on record our reasons for the step we considered necessary; it was no easy matter for those of us on the active staff to sever our connexion with a hospital in the work of which we were interested, but to permit a constitution, such as the above, to pass unchallenged was to surrender the unquestionable privilege of a hospital staff committee—namely, the right to perfect freedom of action in its own particular sphere, both in regard to personnel and cognate matters; loyalty to one another and to our profession demanded such action on our part.

We are, Sir, yours faithfully,

(Signed) STANLEY MELVILLE,
Honorary Consultant to the X-ray and Electrical Departments.
B. WHITCHURCH HOWELL,
Assistant Surgeon.
G. MURRAY LEVICK,
Director of the Electrical and Physiotherapy Departments.
W. P. TINDAL ATKINSON,
Radiologist.

Nov. 15th, 1919.

GENERAL MEDICAL COUNCIL: SCOTTISH ELECTION.

To the Editor of THE LANCET.

SIR,—Will you allow me the courtesy of your columns to thank the registered medical practitioners of Scotland for electing me again as their representative on the General Medical Council, and to say that I shall spare no effort to merit this renewed expression of their confidence.

I am, Sir, yours faithfully,

Edinburgh, Nov. 18th, 1919. NORMAN WALKER.

THE IRISH PUBLIC HEALTH COUNCIL.

In a recent issue of THE LANCET there appeared a letter signed "Irish Medical Practitioner," criticising the constitution of the Irish Public Health Council. A correspondent writes with regard to this letter:—

"In some very important matters your correspondent is not accurately informed. The Chief Secretary for Ireland, as Minister of Health for this country, had the power under the Ministry of Health Act, as it applied to Ireland, to nominate the three registered medical practitioners of the Council without previous reference to any Irish medical organisation representative of the profession. He, however, instead of exercising his statutory right, requested that the 'Irish Medical Committee' should forward him a list of medical practitioners from whom he would make a selection. From the list forwarded by the Irish Medical Committee he made two of the three non-official medical appointments on the Council. The third member, though not nominated by the Irish Medical Committee, is President of the Royal Academy of Medicine in Ireland, an ex-President of the Royal College of Physicians, and a Member of the General Medical Council. The Irish Medical Committee is constituted on the most democratic basis. It is elected by the entire Irish medical profession—irrespective of membership of any medical association; therefore, you will see, in the circumstances, that your correspondent was very wide of the mark when he stated in his letter that the Irish profession had no voice in the selection of the medical representatives on the Irish Public Health Council. As Medical Commissioner of the Local Government Board (Ireland) the Irish Poor-law medical officers found Dr. Bigger, now chairman of the Irish Public Health Council, a very sympathetic administrator, who always gave them, so far as was within his power, the fullest advantages of any legislation with which they were concerned. His appointment as chairman of the Irish Public Health Council was received with general satisfaction by the Irish medical practitioners."

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London on Oct. 30th, and of the Council of the Royal College of Surgeons of England on Nov. 13th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following 79 candidates who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Examining Board and have complied with the necessary by-laws:—

William James McBain Allan, Guy's Hosp.; Frederick Thomas Allen, St. Thomas's Hosp.; George Frederick Baxter, Westminster Hosp.; Grace Mary Beaven, St. George's Hosp.; William Harvey Bennett, Manchester Univ.; Edward Jocelyn Bilcliffe, St. George's Hosp.; Charles Martin Billington, Cambridge Univ. and St. Thomas's Hosp.; Alice Bloomfield, Edinburgh Univ.; Max Richard Bé, Kingston (Ont.); John Vernon Cannadine Braithwaite, Guy's Hosp.; Percy Croad Brett, St. Thomas's Hosp.; Hubert Brookman, Middlesex Hosp.; Alexander Rae Campbell, Dalhousie Univ.; John Douglas Major Cardell, St. Thomas's Hosp.; Marjorie Carnsew Chappel, Royal Free Hosp.; Oscar Theodore John Christensen de Hegartier Clayre, Copenhagen Univ. and St. Bart.'s Hosp.; Enid Margaret Mary Cobb, St. Mary's Hosp.; Harris Cohen, Cardiff, and Westminster Hosp.; Henry Nathan Warner Collins and Redgewell George Dansie, King's Coll. Hosp.; Sarah Helen Davies, Royal Free Hosp.; Alfred Kay Day-Lewis, Guy's Hosp.; John Paul de Silva, London Hosp.; William Herbert Dixon, Guy's Hosp.; Hugh Donovan, Birmingham Univ.; Keith Mitchell Keltiey Duff, Guy's Hosp.; Gwilym Pennant Evans, St. Mary's Hosp.; Victor Norman Fenton, Cambridge Univ. and London Hosp.; William Devereux Forrest, Durham Univ.; Dorothy Winifred Gowers, Royal Free Hosp.; Cyril Griffith-Jones, Cambridge Univ. and St. Bart.'s Hosp.; Ernest Alphonse Hardy and Herbert William Hardy, Charing Cross Hosp.; William George Hay, Guy's Hosp.; Henry Lewis Heimann, Univ. Coll. Hosp.; Eric Perrin Hicks, Cambridge Univ. and St. Bart.'s Hosp.; Frank Bedo Hobbs, Cambridge Univ. and St. Thomas's Hosp.; Harry Cunliffe Hopkinson, Cambridge and Manchester Univ.; Mabel Marian Ingram, Royal Free Hosp.; John Anderson Iswariah, Madras Univ. and Univ. Coll. Hosp.; Shankar Ramchandra Joglekar, Bombay Univ. and Univ. Coll. Hosp.; Robert Blake Poole Lansdown, Cambridge Univ. and Guy's Hosp.; Louis Lavine, Reginald Cyril Bell Ledlie, and Henri Toussaint Le Vieux, Guy's Hosp.; Frederick George Lewtas, Cambridge Univ. and St. George's Hosp.; Norman James Macdonald, Cambridge Univ. and St Bart.'s Hosp.; John Stephen Moore, St. Thomas's Hosp.; George Younger Oliver, Cambridge Univ. and London Hosp.; Sibyl Gertrude Overton, St. Mary's Hosp.; William Griffith Owen, London Hosp.; Jacobus Cornelis Pauw, London Hosp.; Wilfrid Walter Payne, Guy's Hosp.; Hugh Walter Pigeon, McGill Univ.; Eleanor Margaret Reece, Royal Free Hosp.; Arthur Hywel Richards, St. Mary's Hosp.; Samuel Rose, Guy's Hosp.; Malcolm Sarkies, Middlesex Hosp.; Edwin Roland Sarra, Cambridge Univ. and London Hosp.; Ruth Mary Scutt, St. Mary's Hosp.; Cecil George Douglas Sigas, Guy's Hosp.;

James Victor Alexander Simpson, Middlesex Hosp.; David Fox Standing, Birmingham Univ.; *Condren Maurice Strong, Manitoba Univ.; William Stanley Russell Thomas, Cambridge Univ. and Guy's Hosp.; Raphael Thursz, King's Coll. Hosp.; William Guna Tilleke, Cambridge Univ. and Univ. Coll. Hosp.; Ruth Catherine Townshend, Royal Free Hosp.; George Marston Trist, Charing Cross Hosp.; Donald Leslie Tucker, Cambridge and Edinburgh Univ.; William Walsham, St. Mary's Hosp.; William Edward Mandall Wardill, Durham Univ.; Effie Adela Wharton, St. George's Hosp.; Alfred Clarence Samuel Whiteway-Wilkinson, Univ. Coll. Hosp.; Margaret Aileen Williams, Birmingham Univ.; Tudor Williams, Middlesex Hosp.; Claude Bawden Wilson, Cambridge Univ. and Univ. Coll. Hosp.; Maurice Lindsay Young, Cambridge Univ. and St. Thomas's Hosp.; and Thomas Fernando Zerolo, St. Bart.'s Hosp

* M.R.C.S. diploma conferred previously.

LITERARY INTELLIGENCE.—The third edition of "Electrical Treatment," by Dr. Wilfred Harris, which is announced for early publication by Messrs. Cassell and Co., has been carefully revised, and now includes the electrical treatment of shell shock and other war neuroses.

QUEEN'S UNIVERSITY SERVICES CLUB.—The first dinner of the Queen's University Services Club, the membership of which is now up to 74 graduates and 102 undergraduates—i.e., a total of 176—who took part in the late great war, was held in Thompson's Restaurant, Belfast, on armistice night, Colonel Thomas Sinclair, the President, in the chair.

OLD EPSOMIAN CLUB.—The annual meeting and dinner (10s. 6d. without wine) of the club will be held in the Oak Room of the Trocadero Restaurant on Thursday, Dec. 11th, Mr. S. Maynard Smith in the chair, the annual meeting at 6 P.M., the dinner following at 7.30. The list of addresses of members of the club is to be reprinted, and it is desired that all members who may see this notice will write signifying their present address and whether they intend to be present at the dinner. Communications are to be addressed to Mr. E. M. Corner, 37, Harley-street, London, W.1, or Mr. R. Farrant, Westminster Hospital, London, S.W.1.

CENTRAL MIDWIVES BOARD.—A meeting of the Board was held at Queen Anne's Gate Buildings, Westminster, on Nov. 12th, when a letter was considered from the medical superintendent of the Kensington Union Infirmary, proposing to treat cases of pregnant women suffering from venereal disease in the infirmary, and saying that for the pregnant women so suffering he was arranging to have a separate block and a separate staff of nurses. The Board saw no objection to the proposal, provided that the conditions mentioned were strictly observed, but considered that pupils should be trained chiefly on non-venereal cases.—The Chairman approved the following as setting forth the Board's views with regard to applications from institutions contemplating the training of pupil midwives: "Any institution which contemplates training pupil midwives for the certificate of the Central Midwives Board should communicate its intentions *before* it invites or receives pupils. If it fails to do so, and trains pupils, it renders itself liable to difficulties with pupils so accepted in the event of the refusal of recognition by the Board. If it notifies to the Board its intention of training, the Board may (if it thinks all the arrangements promise well) advise the institution to commence or to continue training, and to re-apply at a later date. When this second application is made the Board may (if it is satisfied as to the training) recognise the training carried on since the commencement."—A letter was read from a registered practitioner complaining of the instruction given to pupil midwives in connexion with cases of antepartum hæmorrhage, and suggesting that the Board should instruct teachers not to teach midwives to do things upon which medical opinion is divided. The Board decided that the registered practitioner be thanked for his letter, and that he be reminded that the examiners hold in their hands the character of the teaching, inasmuch as it is their duty to reject candidates whose training appears to them to be unsatisfactory.—A letter was considered from the secretary of the Midwives Institute drawing the Board's attention to the prosecution of Louisa Jones, a midwife, at the Marylebone police-court, for not notifying the local sanitary authority of an alleged case of ophthalmia neonatorum as required by Article 6 of the Public Health (Ophthalmia Neonatorum) Regulations, 1914, and asking the Board to make representations to the Ministry of Health with a view to getting the said article repealed and brought into line with the Rules of the Board. The Board decided that the facts in the case of the St. Marylebone Borough Council *v.* Louisa Jones be brought to the notice of the Ministry of Health with the view of suggesting the desirability of bringing the Public Health Regulations and the Rules of the Central Midwives Board into harmony.—At a special meeting held on the following day several midwives were struck off the Roll for infraction of the Rules.

LANCASHIRE AND WESTMORLAND TUBERCULOSIS SOCIETY.—The next meeting of the society will be held at 3 P.M. on Nov. 28th at the Public Health Laboratory, York-place, Manchester, when a discussion on "Infection and Predisposition in Relation to Tuberculosis" will be opened by Professor Sheridan Delépine. A resolution will be moved extending the work of the society so as to include Cheshire. The attendance of tuberculosis officers and other medical practitioners interested is invited. Full particulars from the honorary secretary, Dr. G. Jessel, County Tuberculosis Dispensary, Leigh, Lancs.

DONATIONS AND BEQUESTS.—By the will of the late Mrs. Maria Louisa Medley, of Devon and London, the testatrix has left a sum of £17,000 and land and buildings at Beaworthy, known as the Winsford Cottage Hospital, founded by her in memory of her late husband, on trust to be carried on as a cottage hospital and convalescent home. Her collection of George III. and other old silver, a Gobelins tapestry suite, and jewellery are to be sold by trustees, the proceeds to be divided equally between the West London Hospital, Hammersmith-road, and the Dreadnought Hospital, Greenwich.

THE LATE MR. G. M. SOPER.—Gerald Morgan Soper, L.R.C.S., M.R.C.S., died at his residence, at Dartmouth, Devon, on Nov. 3rd, from pneumonia. The deceased was the only son of the late Mr. R. W. Soper, M.R.C.S., of Dartmouth. After holding resident appointments at the South Devon Hospital, Plymouth, and the Royal Albert Hospital, Devonport, he practised in Dartmouth, was surgeon to the local hospital, held several public appointments, and was a popular supporter of local sport. He was greatly overworked during the period of the war, and no doubt this undermined his constitution. He was only 42 years of age at the time of his death.

THE CHADWICK TRUST AND NAVAL AND MILITARY SANITATION.—The Chadwick trustees have resolved, under the powers conferred upon them by the scheme which they administer, to award, in the year 1920, a Chadwick gold medal and a prize of £100 to the naval and military medical officer respectively in the British service who during the past five years of war shall be deemed to have distinguished himself the most in promoting the health of the men in the Navy and Army. The nomination to the trustees for such presentation will, as provided by the trust, be made by the Directors-General of the Naval and Military Medical Services respectively.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee, held on Nov. 14th, 17 cases were considered and £212 voted to 15 of the applicants. The following is a summary of some of the cases relieved:—

Widow, aged 82, of M.R.C.S. Eng. who practised at Lambeth and died in 1890. Left unprovided for with one daughter, now aged 49, whose does secretarial work, but is at present out of employment. Applicant receives £10 from dividends and £30 a year from another charity. Was helped by the Fund many years ago. Voted £10.—Daughter, aged 65, of M.R.C.S. Eng. who practised at Albrighton, near Wolverhampton, and died in 1868. Total income £56 a year. Rent £36 paid by friends. Takes in a boarder at 21s. a week when possible, but at present without one. Cannot manage owing to the high cost of living. Was helped by the Fund many years ago. Voted £10. Daughter, aged 70, of M.D. Edin. who practised at Devonport and died in 1886. Applicant endeavours to make a living by letting rooms, from which source she is usually enabled to pay the rent, £24. She receives £15 from dividends, and £30 from brother, but the brother's help must decrease owing to his ill health. Voted £12 in 12 instalments.—Widow, aged 56, of M.D. Edin. who practised at Newcastle and died in 1896. Applicant earns £50 a year as a temporary clerk and daughter earns £99 a year, and provides clothes for mother. Pays £21 a year rent. Suffers from ill-health. Relieved five times, £60. Voted £12 in 12 instalments.—Widow, aged 55, of M.B. Aberd. who practised at Watlington, Oxon, and died in 1912. Applicant is quite unable to work. Only income 10s. a week from sister. Pays 5s. a week rent. Relieved four times, £46. Voted £12 in 12 instalments.—Daughters, aged 55 and 47, of L.S.A. Lond. who practised at Sydenham, and died in 1903. Their joint income is £69, and they also let rooms when possible; rent £51. Both applicants suffer from ill-health. Relieved 11 times, £137. Voted £18 in 12 instalments.—Widow, aged 38, of L.R.C.P. Edin. who practised at Edinburgh and died in 1916. Was left with four children, now aged 13 to 5, all living with applicant. She receives £95 from dividends and £25 by letting rooms; rent and rates £33. Relieved three times, £42. Voted £18 in 12 instalments.—Widow, aged 48 of L.R.C.P. & S. Edin. who practised at Walthamstow and died in 1916. Has no income. She earns something by her own efforts, and pays £13 a year rent, which is provided by pecuniary help from friends. Applicant obliged to apply for assistance owing to inability to obtain employment. Relieved four times, £30. Voted £12 in 12 instalments. M.R.C.S. Eng., aged 50, married, who practised at Birmingham. Entirely incapacitated owing to suffering from disseminated sclerosis. Applicant's wife earns an average of £13 a year by making shell jewellery, and relations pay £26 a year. Rent £6 for cottage in Wales. One son, who is a foundation scholar at Epsom College. Relieved three times, £70. Voted £26 in 12 instalments.

Subscriptions may be sent to the acting honorary treasurer, Dr. Samuel West, at 11, Chandos-street, Cavendish-square, London, W.1.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—An ordinary meeting of the Council was held on Nov. 13th, Sir George H. Makins, the President, being in the chair, when diplomas of Membership were granted to 78 successful candidates.—It was resolved, in accordance with the recommendation of the Finance Committee, that the fee payable upon the first time of admission to the Primary Examination for the Fellowship be increased from 5 guineas to 8 guineas, and be reckoned as part of the fee payable upon admission to the Fellowship, and that this alteration should take effect after the examinations for the Fellowship to be held in May, 1920.—It was determined, in accordance with the suggestion of the Committee of Management, to suspend the requirement that candidates for the Licence in Dental Surgery should produce a certificate of having performed dissections at a recognised medical school during not less than 12 months.—Sir Charles Ballance was elected a member of the Committee of Management in the vacancy caused by the retirement of Sir George Makins.—It was resolved to purchase a collection of human hair illustrating racial differences which formerly formed part of the Barnard Davis collection.—Sir George Makins and Sir John Bland-Sutton were re-elected representatives of the College on the Board of Scientific Societies.—Mr. H. J. Waring reported that it had been found possible to secure two subjects for the next Final Examination for the Fellowship, and that the Court of Examiners had accordingly been able to make arrangements for the examination in operative surgery to be carried out in a modified form, under which each candidate would be required to perform one operation and would also be tested with the aid of instruments and the living model.—The following resolution was carried:—

"The Council of the Royal College of Surgeons of England learn with satisfaction that the control of unclaimed bodies of deceased persons in England and Wales has been transferred to His Majesty's Minister of Health. They would respectfully urge that the shortage of subjects for the education and examination of medical and dental students in London and the Provinces may engage the sympathetic attention of the Minister at an early date."

The resolution was directed to be sent to the Minister of Health.

A REUNION DINNER IN NOTTINGHAM.—On Nov. 13th a successful dinner was given by the doctors of Nottingham city and county to those of their colleagues who had served during the late war. A company of 120 sat down at the Victoria Hotel, under the chairmanship of Mr. A. R. Anderson.

In proposing the toast of "The Guests" Mr. Anderson cordially welcomed them back, saying: "The medical profession during the war has suffered severe losses both on land and sea, but we have been very fortunate because of all our men who left the district only one lost his life on active service, Lewis Moysey, whose untimely death we so deeply regret. Although Moysey played the part and died the death of a hero, it seemed to me that he disappeared amid the fog and turmoil of the war with as little notice as a leaf now falling from the trees; yet he was conspicuous among men in many respects. Educated at Repton, Cambridge, and St. George's Hospital, he began practice in Nottingham in 1900, and remained here until he went to the war. Keen as he was on medicine he might also have been accurately described as a geological specialist. He had a museum at his house, well known in geological circles, which was several times visited by experts from the British Museum. He had written a book on 'The Fossils of the Notts and Derby Coal Field.' He first described a fossil which bears his name, and which has found a home in the British Museum. In addition to this he was a distinguished sportsman. He was one of the best, if not *the* best figure skater in England. He won the medal in the first class at St. Moritz, and was selected to give an exhibition of figure skating before the late King Edward. He was a well-known tennis player, a good cricketer, a fair shot, and a keen fisherman. When the war broke out Moysey was over military age, but after repeated applications, which were at first unsuccessful on this account, he obtained a commission at the end of 1914. He served in England, and after many endeavours to get to the front he was appointed to a hospital ship in 1917. His ship, the *Glenart Castle*, was torpedoed on the night of the 26th of February, 1918, when he lost his life by drowning. In addition to his other accomplishments he was known to be a strong swimmer, probably he went down while endeavouring to save others. He left a widow but no children. Let us then do homage this evening to the memory of this all-round sportsman, of this learned and honourable and gallant gentleman, who never hesitated for a moment when his country called, and who gave up his life in its service." [An obituary notice with a portrait of Captain L. Moysey, R.A.M.C., appeared in THE LANCET of March 30th, 1918, p. 486.] Mr. Anderson concluded by allusion to the arduous times which those who remained behind went through.

A well-organised musical programme terminated a successful medical dinner.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Nurses Registration (No. 2) Bill.

Dr. ADDISON, the Minister of Health, has introduced a Bill in the House of Commons to provide for the registration of nurses. The text of the Bill, which was read for the second time on Tuesday, Nov. 18th, is now published.

HOUSE OF LORDS.

Rats and Mice Bill.

The Rats and Mice (Destruction) Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 12TH.

Spirits for Influenza.

Captain O'GRADY asked the Prime Minister whether he was aware that the result of basing the issue of spirits from bond on the year 1916 was that the returned soldier had no title to share in the distribution, and found great difficulty in getting supplied; whether he was aware that potent doses of spirits were the best prophylactic against influenza, and that many people perished last winter for the want of supplies; and whether he would now allow those who were in a position to deliver larger quantities to do so without reference to the datum year.—Mr. BONAR LAW replied: The question of the supply of whisky is under consideration, and I hope to be able to announce a decision shortly.

Release of Dispensers.

Mr. TOOTILL asked the Secretary for War whether he was aware that Quartermaster-Sergeant Brown, No. 91,920, acting as dispenser, Royal Army Medical Corps, 20th Stationary Hospital, Constantinople, was entitled to demobilisation, together with several other men acting as dispensers, but could not get released until their places had been filled by substitutes; whether dispensers were being sent out to relieve these men; and whether he would take whatever action is necessary to secure their early return and demobilisation.—Mr. CHURCHILL replied: The despatch by specific dates from their overseas stations of all men demobilised has been authorised, subject to the necessary shipping being available, and it is hoped that all such men, including the man referred to in the question, will arrive home at an early date.

Demobilised Medical Practitioners.

Major FARQUHAPSON asked the Secretary for War if he would give the total number of medical practitioners who had been demobilised since April 1st, 1919.—Mr. CHURCHILL replied: The total number of medical officers demobilised since April 1st, 1919, is 4823.

Medical Officers Detained Abroad.

Major FARQUHARSON asked the Secretary for War if he would state how many medical practitioners holding temporary commissions in the Royal Army Medical Corps, the Royal Army Medical Corps, T.F., and the Royal Army Medical Corps, S.R., respectively, were still detained under the terms of their contracts in Mesopotamia, India, and Egypt respectively; and did the numbers given include any officers in respect of whom special recommendation had been made for early release by the Ministry of National Service prior to April, 1919.—Mr. CHURCHILL replied: I am not in a position to give separate figures for the several categories of officers referred to in the first part of the question, but the total figures are as follows: Mesopotamia, 173; India, 152; Egypt, 244. These totals include the following, in respect of whom a special recommendation for early release was received from the Ministry of National Service prior to April, 1919:—

	Temporary commissions.	Territorial Force.	Special Reserve.
Mesopotamia ...	9	—	1
India	12	1	2
Egypt	6	2	1

The figures are only approximate, as a large number of officers are at present embarking for the United Kingdom from the countries in question.

Medical Man's House Requisitioned.

Mr. RAWLINSON asked the First Commissioner of Works if he would state what rent was being paid for the doctor's house and premises, No. 60, St. Andrew's-street, Cambridge, now occupied by the Ministry of Food; whether the premises were larger than were necessary for the purposes of the Ministry; whether the Office of Works had secured premises at a lower rent suitable, in the opinion of their advisers, for the requirements of the Ministry of Food; and whether,

having regard to the importance of a doctor being again resident in that part of Cambridge and to the need of the premises for medical and surgical purposes, he would without delay restore the premises to the medical tenants.—Sir A. MOND replied in a written answer: As the premises were requisitioned no rent is being paid, but compensation will, of course, be made when an application from the owners is received. Smaller premises would not meet the requirements of the Ministry of Food, but I am endeavouring to obtain alternative accommodation, and the premises will be vacated as soon as this is found.

THURSDAY, NOV. 13TH.

Mentally Deranged Soldiers in Pauper Asylums.

Mr. HOUSTON asked the Pensions Minister whether he was aware that discharged soldiers suffering from mental derangement produced by wounds or shell shock were at present inmates of the pauper lunatic asylum at Rainhill, Lancashire; whether he could state by what authority they were sent there and treated as pauper lunatics; and whether he could arrange that such men shall be transferred from the Rainhill pauper lunatic asylum to suitable hospitals or homes where they would receive special treatment with a view to their recovery.—Sir L. WORTHINGTON-EVANS replied; I am aware of the fact stated in the first part of the question. The men to whom the honourable Member refers are, however, not treated as pauper lunatics, but as private patients, the cost of their maintenance and of the special privileges which private patients enjoy being borne by the Ministry of Pensions.

Mr. HOUSTON: But does my right honourable friend realise the distress and the humiliation that this supposed stigma of pauperism inflicts upon men and their relatives, and will he take effective measures to dispel this belief?—Sir L. WORTHINGTON-EVANS: I hope my honourable friend's question will help to dispel it, and I am glad to repeat that they are not treated as pauper patients at all, but they are treated as private paying patients and they are paid for out of Pensions Funds.

Mr. HOUSTON: But the fact that they are sent to a pauper lunatic asylum gives the impression that they are so treated.—Sir L. WORTHINGSON-EVANS: That is a superficial impression which I hope will be removed. It is not possible for the Ministry of Pensions to start asylums all over the country, and if we do not use those already existing friends of the men will be deprived of visiting places near their homes.

Mr. HOUSTON: But does my right honourable friend realise that the object of my question is to remove this strong impression?—Sir L. WORTHINGTON-EVANS: I am obliged to my honourable friend.

Support of the Blind in Ireland.

Mr. DONALD asked the Chief Secretary to the Lord Lieutenant of Ireland if he would state when the Government proposed to introduce legislation in support of the blind in Ireland.—Mr. MACPHERSON replied: I trust that this matter may be dealt with in the contemplated Irish Education Bill.

Special Bedding and Clothing of Tuberculous Cases.

Sir HERBERT NIELD asked the Pensions Minister whether he would reconsider the existing provisions of Circular 169, together with Correction Slip 19, dealing with the question of special bedding and clothing of tuberculous cases; whether, having regard to the communications which had passed between him and the County of Middlesex War Pensions Committee on the subject, he could hold out any reasonable expectation of the modification of the conditions with respect to overcoats and underclothing of men while undergoing medical treatment; whether he was aware that surgical appliances for artificial limbs caused clothing to wear out more rapidly than might otherwise be the case; and, in the tuberculous case which has arisen, would he consider the urgent need for the man to be protected from chills and damp when, as the result of exposure to the elements necessitated by this mode of treatment, the one and only suit he might possess became wet.—Sir L. WORTHINGTON-EVANS replied in a written answer: I am aware that the present regulations with regard to the supply of special bedding and clothing have given rise to some complaint, and I have the matter under consideration.

Medical Referees at Hastings.

Mr. R. YOUNG asked the Minister of Pensions if the War Pensions Committee for Hastings were appointing additional doctors to act as medical referees; whether in these appointments he would advise that priority be given to medical men who had served in the services abroad, and whose practices had thereby suffered; and that in these cases where the medical man was not on the panel under the National Health Insurance Acts this would be favourably considered as an additional reason for appointment, provided that in all cases medical qualifications were equal to other applicants.—Sir L. WORTHINGTON-EVANS replied in a written answer: The answer to the first part of the question is in the negative. Local committees are, in fact, not empowered to appoint medical referees. With regard to the remainder of the question, it is the practice of the Ministry to give preference to medical men who have served abroad, with a second preference to medical men who have served at home, and, subject to these preferences, to appoint men who have not had service, and amongst them doctors not on the panel are preferred as likely to be able to devote more time to the work.

MONDAY, NOV. 17TH.

Demobilised Medical Officers.

Brigadier-General CROFT asked the Secretary for War whether his attention had been called to the fact that there were numerous medical officers who, by joining the army, sacrificed their practices; and whether steps were being taken to ensure that employment as far as possible should be given to demobilised temporary medical officers.—Mr. CHURCHILL answered: Every sympathy has been shown to the officers referred to by my honourable and gallant friend, and instructions were issued some time ago to military commands that when the part-time services of civil medical practitioners are required every endeavour should be made to employ those demobilised officers who had served overseas. I understand also from the Ministry of Health that endeavours are made to give preference, as far as possible, to ex-service candidates for appointments under local authorities.

Medical Service in Mesopotamia.

Mr. PERKINS asked the Secretary for India whether he was aware that several regular officers of the Indian Medical Service now in Mesopotamia had served there continuously for four hot seasons, while some of them had not been on furlough for nine years, and what arrangements had been made for their speedy relief.—Mr. MONTAGU answered: There are, I am afraid, a number of officers in the Indian Medical Service whose leave is overdue. This unfortunate state of affairs, to remedy which no effort is being spared, is not peculiar to Mesopotamia. If the honourable Member refers specifically to Indian Medical Service officers in civil employment in Mesopotamia he will be glad to hear that it is hoped to replace them before long.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

J. D. Bangay to be Surgeon-Lieutenant.

Surg.-Cmdr. G. G. Borrett to be Surgeon-Captain (retired).

ARMY MEDICAL SERVICE.

Temp. Major-Gen. Sir Berkeley G. A. Moynihan, K.C.M.G., C.B. (Major, R.A.M.C., T.F.), relinquishes his temporary commission on re-posting.

Col Sir W. H. Horrocks, K.C.M.G., C.B. (retired pay), relinquishes the temporary rank of Brigadier-General on ceasing to be re-employed.

Col. C. W. R. Healey, C.M.G., retires on retired pay.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. C. W. H. Whitestone is placed on retired pay.

Lieut.-Col. and Bt. Col. L. W. Harrison, D.S.O., K.H.P., retires on retired pay.

Major and Bt. Lieut.-Col. F. D. G. Howell, D.S.O., M.C., relinquishes the temporary rank of Lieutenant-Colonel.

The undermentioned relinquish the acting rank of Lieutenant-Colonel: Major and Bt. Lieut.-Col. F. W. Lamballe (on ceasing to be specially employed); Majors J. E. H. Gatt, A. W. A. Irwin, R. J. Frankun; Capts. J. B. A. Wigmore, J. W. O'Brien, M.C.; Temp. Capt. C. J. West, O.B.E., and reverts to the acting rank of Major.

To be acting Lieutenant-Colonels: Major and Bt. Lieut.-Col. R. B. Ainsworth, D.S.O. (whilst specially employed); Majors E. T. Potts, C.M.G., D.S.O., A. J. Williamson (whilst specially employed); Capt. D. C. G Ballingall, M.C.

The undermentioned relinquish the acting rank of Major: Capts. W. T. Graham, O.B.E., C. G. G. Keane; Temp. Capts. B. Knowles, M.C., H. C. Gibson (on re-posting). On ceasing to be specially employed: Capt. R. B. Phillipps; Temp. Capts. R. K. Robertson, S. A. W. Munro, M.C., W. M. Oakden, W. E. Graves.

To be acting Majors: Capt. A. P. O'Connor, M.C.; Temp. Capt. R. H. Stevens. Whilst specially employed: Capt. and Bt. Major W. L. Webster; Capt. R. S. Cumming, M.C.; Temp. Capt. E. J. Maxwell.

The undermentioned Majors to be acting Lieutenant-Colonels whilst commanding Medical Units: L. A. A. Andrews, C. M. Drew, D.S.O.

Major W. J. S. Harvey, D.S.O., relinquishes the temporary rank of Lieutenant Colonel.

Major W. J. E. Bell, D.S.O., relinquishes the acting rank of Lieutenant-Colonel on re-posting.

Temp. Capt. O. de B. Marsh, O.B.E., to be acting Major.

Temp. Capt. W. F. Abbott relinquishes the acting rank of Major on ceasing to be specially employed.

Temp. Capts. G. H. Wood and R. S. Dickie to be Captains.

Late temporary Captains to be temporary Captains: J. D. Judson, G. J. Arnold, D. L. Lindsay.

Temp. Lieut. M. Cahill to be temporary Captain.

J. C. J. Callanan to be temporary Lieutenant.

Officers relinquishing their temporary commissions: Temp. Lieut.-Cols. P. W. G. Sargent, C.M.G., D.S.O. (Lieut., R.A.M.C., T.F.), H. J. Hargrave (Lieut.-Col., T.F. Res.), J. W. H. Brown; (retaining the rank of Lieutenant-Colonel), H. C. Marr, E. G. Coward (on ceasing to be employed with the Huddersfield War Hospital), R. L. Joynt; Temp.

Majors (acting Lieut.-Col.) D. K. McDowell, C.M.G. (granted the rank of Lieutenant-Colonel), R. Standish-White (retains the rank of Major), F. N. Holden (on account of ill-health) (retains the rank of Major), W. B. Cozens (retains the rank of Major). Temp. Capt. (acting Lieut.-Col.) A. N. Bruce (granted the rank of Lieutenant-Colonel).

Temp. Capt. and Bt. Major A. E. Giles retains the Brevet rank of Major.

Temporary Captains granted the rank of Major: D. G. Wishart, J. Gibson, A. P. Saint, A. L. Krogh, C. E. Dukes, O.B.E., E. A. Lindsay (acting Major) O. C. G. Shields (acting Major), M.B.E., O. de B. Marsh, O.B.E., A. T.W Forrester, J. H. Bankes, A. W. Tabuteau, J. Morrison, G. Richardson, H. W. Turner, W. F. Morgan, G. McNeill (acting Major), F. C. Lees.

Temporary Captains retaining the rank of Captain: W. W. Pearse, G. H. Alabaster (on account of ill-health contracted on active service), F. J. Cleminson, H. Topham, R. S. Roper, T. P. Greenwood (on ceasing to be employed at the Notts County War Hospital), W. G. T. Story, F. J. McGlade, M. Cahill, E. W. N. Wooler, J. Jenkins, J. Spears (on account of ill-health contracted on active service), D. P. Blair, J. R. Dickson, D. C. M. Page, M.C., A. G. Christian, R. I. Wolfe, H. M. Anderson, R. C. McMillan, A. B. Appleton, C. Lundie, J. P. O'Hea, C. M. Jones, J. N. J. Hartley, O.B.E., R. S. Snowie H. G. Janion, M.C., E. H. Shaw, J. Harvey, W. A. Russell, G. M. Brown, O. Pitt, W. L. M. Day, A. H. Style, G. W. L. Kirk, M. Douglas, F. K. Marriott, M.C., F. D. Nicholson, G. B. Burwell, M.C., A. J. M. C. Morrison, G. W. Rea (acting Major), A. Newton-Brady, F. W. Falconer, E. W. G. Young, H. M. Gilmour, G. Milne, J. M. Land, A. S. Carter, A. G. Bryce, J. E. A. Underwood, H. C. M. McManus, J. F. C. Haslam, D. A. Chalmers, E. A. T. Green, J. N. F. Fergusson, H. W. Scott-Wilson, D. S. MacBean, H. E. Gamlen, A. H. Davies, J. G. Scott, D. D. Pinnock, J. D. Batt, M.C., W. H. G. Patrick, R. A. Morrell, H. C. Duffy, T. O. Robson, A. J. O'Leary, C. F. O. White, J. L. Waller, J. Fanstone, J. W. Gilbert, M.C., S. A. Burn, H. G. Joyce.

Temporary Lieutenants retaining the rank of Lieutenant: M. D. B. Tonks, S. J. Healy, J. Dwan, A. L. Lynch.

SPECIAL RESERVE OF OFFICERS.

Captains to be acting Majors whilst specially employed: J. A. Stewart, M.C., H. D. Gardner.

Capt. A. H. Habgood, D.S.O., relinquishes the acting rank of Major on ceasing to be actively employed.

Capt. S. R. Armstrong, O.B.E., relinquishes the acting rank of Major.

Lieutenants to be Captains: C. O. Anderson, S. E. Critchley, A. Eldinow, W. S. Herman, C. P. Hines, C. G. J. Rayner, E. E. R. Spurway, L. Handy, A. Abelson, C. B. Dyson.

TERRITORIAL FORCE.

Major (acting Lieut.-Col.) W. R. N. Smithard relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed.

Capt. J. W. Simpson relinquishes his commission on account of ill-health contracted on active service, and retains the rank of Captain.

Capt. (acting Major) H. J. Gorrie, O.B.E., relinquishes the acting rank of Major on ceasing to be specially employed.

Capt. C. G. Strachan, M.C., to be acting Major whilst specially employed.

Capt. (acting Lieut.-Col.) H. N. Barnett relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed.

4th Scottish General Hospital. Lieut.-Col. (Bt. Col.) A. Napier, having attained the age limit, is retired, and retains his rank with permission to wear the prescribed uniform.

1st Western General Hospital: The undermentioned officers are seconded for duty with Alder Hey Special Military Surgical Hospital: Capts. T. K. W. Armour (acting Major), J. L. Roberts, T. P. McMurray.

TERRITORIAL FORCE RESERVE.

Lieut.-Col. Sir R. Ross, K.C.B., K.C.M.G., from 1st Western General Hospital, to be Colonel.

Capt. H. A. Thomson, C.M.G., from 2nd Scottish General Hospital, to be Colonel.

Capt. Sir B. E. Dawson, G.C.V.O., C.B., from 2nd London General Hospital, to be Captain, and is granted the honorary rank of Major-General.

ROYAL AIR FORCE.

Medical Branch.—Capt. J. A. Giles to be acting Major whilst employed as Major.

Flight Lieut. G. Cranstoun to be acting Squadron Leader whilst employed as Squadron Leader.

Capt. G. W. Harbottle is transferred to the unemployed list.

The undermentioned Flying Officers to be Flight Lieutenants: S. A. Clark, S. R. E. Davies, J. Gorsky, V. I. Levy, K. F. D. Waters.

The undermentioned are transferred to the employed list: Capts. N. Rumboll and H. C. Cox.

Capt. Q. M. Gray relinquishes his commission on account of ill-health, and is permitted to retain his rank.

Dental Branch.—Flying Officer F. B. Stradling to be Flight Lieutenant.

S. G. Smith is granted a temporary commission as Lieutenant.

INDIAN MEDICAL SERVICE.

The King has approved the relinquishment of temporary rank in the Indian Medical Service of Capt. L. S. Machado.

The undermentioned temporary Captains, R.A.M.C., relinquish their commissions on transfer to the Indian Medical Service: R. A. Leembruggen and L. Blake, M.C.

TERRITORIAL FORCE DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Territorial Force: Col. (temp Major-Gen.) Sir R. Jones, K.B.E., C.B., Lieut.-Cols. R. R. Sleman, V.D., W. Thorburn, C.B., C.M.G., C. H. Hawkins, C.B.E., D.S.O., W. Howarth (Bt. Col.), Major (acting Col.) T. Kay, D.S.O., Majors J. G. Martin, E. C. Stack, W. M. Mackay, J. B. McBride, M. B. Ray, D.S.O., R. Lindsay, W. C. Murray.

THE HONOURS LIST.

The following awards are announced:—

Distinguished Service Cross.

Surg. Lieut. WALTER FRANCIS RAPHAEL CASTLE, R.N.—For distinguished services during the action off Onega on Oct. 1st, 1919, in attending to the wounded under heavy enemy fire.

Surg. Lieut. ALAN ANDREAS COCKAYNE, R.N.—For distinguished services under fire as medical officer of the *Zoraster*, *Venture*, and *Emile Nobel* in action off Fort Alexandrovsk on May 21st, 1919.

The name of Surg. Lieut.-Cmdr. G. G. Vickery, O.B.E., R.N., is mentioned in despatches.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, Nov. 24th.

ODONTOLOGY (Hon. Secretaries—G. Paton Pollitt, W. Kelsey Fry, J. Howard Mummery): at 8 P.M.

Paper:

Mr. J. Howard Mummery: The Dental Follicle and its Relation to Pathological Conditions.

Demonstration of Microscopical Slides at 7.30 P.M.

Tuesday, Nov. 25th.

MEDICINE (Hon. Secretaries—W. Cecil Bosanquet, J. H. Thursfield): at 5.30 P.M.

Paper:

Dr. G. Graham: Arthritis in Dysentery: its Causation, Prognosis, and Treatment.

Friday, Nov. 28th.

STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—E. A. Cockayne, H. C. Cameron C. P. Lapage): at 4.30 P.M.

Dr. Eric Pritchard: (1) Hypertrophy of Pylorus with other associated Hypertrophies; (2) Hypertrophy of Lower End of Œsophagus with Papilloma of Cardia.

Cases will be shown.

EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—William Butler, M. Greenwood): at 8.30 P.M.

Paper:

Colonel William Hunter, C.B., M.D.: The Epidemiology of Typhus Fever in Serbia.

Dinner will be provided at the Welbeck Palace Hotel at 7 P.M. (price 7s.). It is specially requested that those intending to dine will send names to Dr. Major Greenwood, Lister Institute, Chelsea, S.W.1, not later than Wednesday, Nov. 26.

MEDICAL SOCIETY OF LONDON, 11, Chandos-st., Cavendish-sq., W.

MONDAY, Nov. 24th.—Discussion on the Treatment of Malaria, to be introduced by Lieut.-Col. S. P. James, I.M.S. Followed by Dr. G. N. Pitt, Col. A. Castellani, Major W. Byam, R.A.M.C., Dr. G. W. Ward, and Dr. W. H. Willcox, C.B., C.M.G.

ILLUMINATING ENGINEERING SOCIETY, House of the Royal Society of Arts, John-street, Adelphi, W.C.

TUESDAY, Nov. 25th.—5.30 P.M., Address: The President: The Work of Lambert.—The Hon. Secretary: Report on Progress.—New Developments in Photometry and High Candlepower Lamps, &c.

HUNTERIAN SOCIETY, at the School of Oriental Languages, Finsbury-circus, E.C.

WEDNESDAY, Nov. 26th.—9 P.M., Paper:—Col. A. H. Tubby, C.B., C.M.G.: Some Surgical Experiences of the War in the Near East.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY, Nov. 27th.—8.30 P.M., Inaugural Address:—Dr. R. H. Wellington (President). Paper:—Dr. A. P. Gibbons: Suggested Reforms in the Workmen's Compensation Act.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

THURSDAY, Nov. 27th.—3 P.M., Annual Meeting of Fellows and Members.

ROYAL INSTITUTE OF PUBLIC HEALTH, in the Lecture Hall of the Institute, 37, Russell-square, W.C.

Course of Lectures on Housing Problems and Town Planning in Relation to Public Health.

WEDNESDAY, Nov. 26th.—4 P.M., Lecture V.:—Dr. N. Raw, C.M.G., M.P.: Housing in Relation to Tuberculosis and other Infectious Diseases.

Course of Instruction for Candidates as Tuberculosis Officers, General Practitioners and others. Bacteriological Demonstrations will be given in the Laboratories of the Institute, and visits arranged to Sanatoriums, Tuberculosis Dispensaries, &c.

THURSDAY, Nov. 27th.—5 P.M., Lecture VIII.:—Dr. J. Watt: Sanatorium Treatment of Pulmonary Tuberculosis.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY, Nov. 26th.—4.30 P.M., Lecture:—Dr. D. Grant: Tuberculous Laryngitis and Diseases Simulating it.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C.1.

MEDICAL SCHOOL.

MONDAY, Nov. 24th.—2–3.30 P.M., Out-patient Clinic: Dr. Collier. 3.30 P.M., Lecture:—Dr. Saunders: Myopathies.

TUESDAY, Nov. 25th.—2–3.30 P.M. Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Ward Cases: Dr. Risien Russell.

WEDNESDAY, Nov. 26th.—2 P.M., Lecture:—Mr. Armour: Surgery of the Spinal Cord. 3.30 P.M., Lecture:—Mr. Scott: Tumours of the Auditory Nerve.

THURSDAY, Nov. 27th.—2-3.30 P.M., Out-patient Clinic: Dr. Farquhar Buzzard. 3.30 P.M., Lecture:—Dr. Saunders: Personal Muscular Atrophy.
FRIDAY, Nov. 28th.—2-3.30 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Ward Cases: Dr. Aldren Turner.
Fee for Post-Graduate Course £5 5s. C. M. Hinds Howell, Dean.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART POST-GRADUATE COURSE, Westmoreland-street, W.
MONDAY, Nov. 24th.—11 A.M., Out-Patients: Dr. Goodall. 2 P.M., In-patients: Dr. Moon.
TUESDAY.—2 P.M., Out-Patients: Dr. R. Wells. 2.30 P.M., In-patients: Dr. Gibbes.
WEDNESDAY.—2 P.M., Out-patients: Dr. Moon. 5.30 P.M., Lecture:—Dr R. Wells: Angina.
THURSDAY.—10 A.M., In-patients: Dr. Hamill. 2 P.M., Out-patients: Dr. Price.
FRIDAY.—2 P.M., Out patients: Dr. Gibbes. 2.30 P.M., In-patients: Dr. Wells.
SATURDAY.—10 A.M., Out-patients: Dr. Hamill.

VICTORIA HOSPITAL FOR CHILDREN POST-GRADUATE COURSE. Tite-street, Chelsea, S.W.
MONDAY, Nov. 24th.—4.30 P.M., Lecture:—Mr. C. J. Marshall: Congenital Talipes.
TUESDAY.—4.30 P.M., Lecture:—Dr. J. W. Carr: Congenital Pyloric Stenosis.
WEDNESDAY.—3 P.M., Dr. J. M. H. Macleod: Demonstration of Skin Cases in Out-patient Department.—Dr. Melville: Demonstration in X Ray Department.
THURSDAY.—4.30 P.M., Lecture:—Mr. W. F. Fedden: Hernia.
FRIDAY.—4.30 P.M., Lecture:—Dr. Helen Ingleby: Congenital Morbus Cordis.
SATURDAY.—11 A.M., Lecture:—Sir Humphry Rolleston: Jaundice in the Newly-born.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Nov. 25th.—4.30 P.M., Lecture:—Dr. C. Moore: Disordered Action of the Heart.

Communications, Letters, &c., to the Editor have been received from—

A.—Dr. F. P. Atkinson, Bexhill-on-Sea; *Archives of Radiology and Electrotherapy*, Lond.
B.—Dr. H. W. Bayly, Lond.; Dr. J. Blomfield, O.B.E., Lond. British Drug Houses, Lond., Director of; Capt. H. H. C. Baird, D.S.O., Lond.; Dr. V. Borland, Lond.; British Instructional Films, Lond.; Board of Agriculture and Fisheries, Lond; Mrs. R. Brown, Lond.; Bibliothèque et Musée de la Guerre, Paris, Secrétaire-Général.
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J.—Prof. F. Wood Jones, Lond.; Mr J. R. Jarrett, Trawsfynydd.
K.—Dr. J. Kirkland, Lond.
L.—Lancashire and Westmorland Tuberculosis Society, Hon. Sec. of; Dr. C. Lillingston, Gorleston; Dr. G. C. Low, Lond.; Mr. R. Lake, Lond.
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W.—Dr. H. Williamson, Lond.; Dr. J. Watson, Jersey; Dr. A. M. Webber, Nottingham; Messrs. John Wright and Sons, Bristol; World Trade Club, Lond.; Dr. J. D. Wynne, Norwich.

Communications relating to editorial business should be addressed exclusively to the Editor of THE LANCET, 423, Strand, London, W.C. 2.

RECENT outbreaks of foot and mouth disease have led to the issue by the Ministry of Health of a Memorandum to local authorities urging strict vigilance. The Memorandum is accompanied by a description of the early stages of the disease in the animal, issued by the Board of Agriculture and Fisheries.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BLAIR, MARY A., M.D. Lond., has been appointed Medical Officer to the Post Office, for the female staff in the Westminster Division of the South-Western District.
BOYD, W., L.R.C.P. & S. Edin., Medical Officer to Banbridge Union Workhouse Infirmary.
GARROW, R. P., M.D. Aberd., Assistant Medical Officer of Health, Ealing.
HEATON, TREVOR B., B.M., Lee's Reader in Anatomy at Oxford.
MCKENNA, T. H., Certifying Surgeon under the Factory and Workshop Acts for Forkhill.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen Royal Hospital for Sick Children.—Jun. H.P. and S.
Aylesbury Royal Buckinghamshire Hospital.—H.S. £200.
Bradford Children's Hospital.—H.S. £180.
Bristol Eye Hospital.—Hon. S. Hon. Asst. S.
Bristol General Hospital.—Cas. H.S. £175.
Cambridge, Addenbrooke's Hospital.—H.P. £130.
Cancer Hospital (Free), Fulham-road, S.W.—Surg. Regis. £100.
Cardiff, Glamorgan County Council.—County M.O. £1000.
Carlisle, Cumberland County Council.—Three Asst. County M.O.'s £450.
Central London Ophthalmic Hospital, Judd-street, W.C.—Asst. S. Path. £75.
Chester City and County.—Asst. M.O.H. £400.
Darlington Union.—M.O. and Pub. Vac. £350.
Derby, Royal Derby and Derbyshire Nursing and Sanitary Association. Two Hon. Obst. P.'s to Nightingale Nursing Home.
Dudley County Borough Education Committee.—Asst. School M.O. and M.O.H. £500.
Dumfries, Crichton Royal.—Asst. P. £350.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—Female H.P., Obstet. Asst., and Two H.S.'s. £50. Hon. Anæs. £10 10s. Hon. Asst. Obstet.
Finsbury Dispensary, Brewer-street, Goswell-road, E.C.—P. £50.
Gloucestershire Royal Infirmary and Eye Institution.—Asst. S.
Great Northern Central Hospital, Holloway, N.—Res. M.O.
Grosvenor Hospital for Women, Vincent-square, Westminster, S.W.—Asst. Gynæc.
Hereford County and City Mental Hospital.—Sen. Asst. M.O. £400.
Huddersfield Royal Infirmary.—Sen. H.S. and Asst. S. £200 and £150 respectively.
Hull Royal Infirmary.—H.P. £200.
Johannesburg, South African School of Mines and Technology.—Prof. of Veterinary Anat. £800.
King's College Hospital, Denmark-hill, S.E.—Path. Registrar. £400.
King's College Hospital Medical School, Denmark-hill, S.E.—Lecturer in Forensic Medicine and Toxicology.
Leamington Spa, Warwickshire United Districts.—M.O.H. £700.
Lightburn Joint Hospital, Shettleston, near Glasgow.—Res. Phys. Supt. £350.
Liverpool Eye and Ear Infirmary, Myrtle-street.—Hon. Asst. S. and Hon. Path.
London Panel Committee, 51, Chancery-lane, W.C.—Asst. Med. Sec. £200.
London Temperance Hospital, Hampstead-road, N.W.—Hon. Dent. S.
Manchester, Booth Hall Infirmary for Children.—Med. Super. £650.
Manchester City Education Committee.—Female Asst. School M.O. £450.
Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill road.—H.S. £150.
Meathop, Grange-over-Sands, Westmorland Sanatorium and Home.—Second Asst. M.O. £250.
Miller General Hospital for South-East London, Greenwich-road, S.E.—Res. M.O. £350.
Newport Education Committee.—Dentist. £400.
Northallerton, North Riding of Yorkshire County Council Education Committee.—Asst. Sch. M.O.'s £500.
Northamptonshire Sanatorium. Interim Med. Super. £400.
Nottingham General Hospital.—H.S. £150.
Oldham Royal Infirmary.—Ophthal. S. £50.
Paddington Green Children's Hospital, London, W.—Radiographer.
Plymouth, Borough of.—Res. M.O. at Udal Torre Sanatorium, Yelverton. £350.
Port Elizabeth, Municipality of.—M.O.H. £900.
Portsmouth Education Committee.—Asst. Sch. M.O. £500.
Portsmouth Royal Hospital.—H.S. £150.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. P., Hon. P., Hon. Asst. Ophth. S., and Hon. Asst. S.
Queen Mary's Hospital for the East End, Stratford, E.—Hon. Asst. P.'s.
Reading, Berkshire Education Committee.—Asst. Sch. Med. Insp. £400.
Royal Chest Hospital, City-road, E.C.—Clin. Assts.
Royal Free Hospital, Gray's Inn-road, W.C.—Clin. Assts. Asst. P. M.O.'s in Charge of Electro-Therapeutic, &c., Depts.
Royal Free Hospital and London School of Medicine for Women.—Pathology and Direct. of Path. Studies. £700.
Royal Waterloo Hospital for Children and Women, S.E.—Hon. P.
St. Bartholomew's Hospital.—Chief Assts. to Medical and Surgical Non-Professorial Clinical Units. £200. Chief Assts. for Diseases of Eye, Throat, and Nose. £50.
St. Marylebone Infirmary.—Con. P., S., Gynæc., Oph. S., Neurol., Dermat., Bact. and Advising Sanitary O., £100; P. to X Ray Dept., £150; Dent. S., £50.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Jun. H.S. £75.
St. Thomas's Hospital, S.E.—P.
Salford Royal Hospital.—Cas. H.S. £100.
Samaritan Free Hospital for Women, Marylebone-road, N.W.—Registrar. £50.
Sheffield Royal Hospital.—Res. Asst. Cas. O. £120.
Singapore, Straits Settlements, Health Department.—Asst. Health O. $4800-$5400.
Southwark Borough—Female Asst. M.O.H. £400.
Stafford, Staffordshire General Infirmary.—H.S. £250. H.P. £200.
Surrey, Virginia Water, Holloway Sanatorium (Hospital for the Insane). Jun. Asst. M.O. £300.
Swansea County Borough—Asst. M.O. £450.
Taunton and Somerset Hospital.—Sen. and Jun. H.S.s. £200 and £150.
University College Hospital, Gower-street, W.C.—Surg. Registrar. £25). Hon. Radiologist.
University of Birmingham—Female Demon. in Anat.
University of London—Chair of Physiology. £800.
Ventnor, Isle of Wight. Royal National Hospital for Consumption and Diseases of the Chest.—Asst. Res. M.O. £200.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—Sen. Res. M.O. £250
Wakefield, West Riding Asylum.—Junior Asst. M.O. £400.
Walsall General Hospital.—Female Jun. H.S. and Anæs. £175.
Watford Urban District Council Maternity and Child Welfare Centre.—Female M.O. £250.
Wolverhampton and Staffordshire General Hospital.—H.S. £200.

Births, Marriages, and Deaths.

BIRTHS.

JOBSON.—At Beechwood, Epsom, on Nov. 12th, the wife of J. Stanley Jobson, M.B., F.R.C.S., of a daughter.
PIRRIE.—On Nov. 11th, at the Dispensary, Newcastle-on-Tyne, the wife of Ivan Miller Pirrie, M.C., M.B., B.S., of a daughter.
WEST.—On Nov. 15th, 1919, at 7, Crawford-gardens, Cliftonville, the wife of Henry O. West, M.D., of a son.

MARRIAGES.

BLAIKIE—CAMPBELL.—On Nov. 12th, at Meerut, India, Captain Cuthbert James Blaikie, R.A.M.C., to Helen Dorothea Campbell, Q.A.I.M.N.S., India, daughter of Colonel J. C. Campbell, late R.E.
GROVE WHITE—ROLLAND.—On Nov. 12th, at St. Columba's, Pont-street, Captain James Herbert Grove White, M.D., I.M.S., to Frances Katherine, second daughter of the late J. H. W. Rolland, of Gledhow-gardens, S.W.
STEVENS—PAUL.—On Nov. 11th, at St. Peter's Church, Southsea, Surgeon-Lieutenant John Greet Stevens, R.N., to Kathleen Rosalie, eldest daughter of Engineer Captain Oliver R. Paul, C.B.E., R.N.
WESTON—MURRAY.—On Nov. 14th, at All Souls' Church, Langham-place, Brevet-Major T. A. Weston, M.B., R.A.M.C., to Muriel Zica, daughter of the late Mr. Thomas Murray, Buenos Aires, and Mrs. Murray.

DEATHS.

ACWORTH.—On Nov. 13th, at her residence, Buckland-crescent, Hampstead, N.W., Mary S. Acworth, M.D.
HEWITT.—On Nov. 8th, at Newlands House, Tooting Bec Common, David Basil Hewitt, L.R.C.P. & S.I., J.P., late of Northwich, Cheshire, aged 76.
LAWRENCE.—On Nov. 9th, at Lyndhurst-road, Exeter, Henry Cripps Lawrence, M.D., aged 78.
RILEY.—On Nov. 16th, at his residence "Sandringham," Exeter-road, Bournemouth, James Riley, M.R.C.S., L.R.C.P., aged 85.
VENN.—On Nov. 13th, at a nursing home in Harrogate after four days' illness, Albert John Venn, M.D., of the Junior Carlton Club, London, in his 80th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

APPLETON, D., AND CO., London and New York.
Diseases of the Ear. By E. B. Dench, M.D. 5th ed. Pp. 740. 30s.

ARNOLD, EDWARD, London.
The British Internee in Switzerland. By Lieutenant-Colonel H. P. Picot, C.B.E. Pp. 212. 10s. 6d.
A Physician in France. By Major-General Sir Wilmot Herringham, K.C.M.G., C.B. Pp. 293. 15s.

BAILLIÈRE, TINDALL, AND COX, London.
A Dictionary of Treatment. By Sir William Whitla, M.D., M.P. 6th ed. Pp. 1083. 25s.
Manual of Tropical Medicine. By A. Castellani, M.D., and A. J. Chalmers, M.D. 3rd ed. Pp. 2436. 45s.

BALE, JOHN, SONS, AND DANIELSSON, London.
Text-book of Chemistry: Inorganic and Organic, with Toxicology. By R. A. Witthaus, M.D. 7th revised ed. By R. J. E. Scott, M.D. Pp. 478. 20s.
Autobiographical Reminiscences of Sir Herman Weber. Written privately for the family. With annotations and a list of his medical writings by his son, F. P. Weber.

BELL G., AND SONS, London.
Hygiene o Town Planning and Vegetation. By P. S. G. Dubash, D.Sc. With Introduction by Hon. Sir John Cockburn, M.D. Pp. 128. 3s.

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Practical Physiological Chemistry for Indian Medical Students. By C. C. Caleb, M.B. Pp. 252. Rs. 6.

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Bacteriology and Mycology of Foods. By F. W. Tanner, M.S., Ph.D. Pp. 591. 28s.
Food: A Text-book for Classes in Household Science. By Mary T. Dowd and Jean D. Jackson. Pp. 173. 6s.

CHURCHILL, J. AND A., London.
A Manual of Midwifery. By T. W. Eden, Major, R.A.M.C. Pp 747. 24s.
Post-Mortem Manual. By C. R. Box, M.D. 2nd ed. Pp. 372. 8s. 6d.
Venereal Disease: Its Prevention, Symptoms, and Treatment. By H. W. Bayly, M.C. Pp. 152. 10s. 6d.
Inguinal Hernia. The Imperfectly Descended Testicle and Varicocele. By P. Turner, M.S. Pp. 104 9s. 6d.
An Atlas of Dental Extractions. With Notes on the Causes and Relief of Dental Pain. By C. E. Wallis, M.R.C.S., L.D.S. 2nd ed. Pp. 26 + plates. 5s.

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A Complete System of Nursing. By A. Millicent Ashdown. Pp. 746. 12s. 6d.

EAGLE, STAR, AND BRITISH DOMINIONS INSURANCE COMPANY, London.
Baby from Bud to Blossom. By Mrs. J. L. Hewer. With forewords by Dr. Addison, Dr. Eric Pritchard, and Lady Leslie Mackenzie. Pp. 218.

EVELEIGH NASH COMPANY, London.
A Plea for the Treatment of Cancer without Operation. By Robert Bell, M.D. Pp. 75. 2s. 6d.

FISCHER, S., Berlin.
Das Erleben. By A. Koelsch. Pp. 389.

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Immunity and Health: Function of the Tonsils and Other Sub-epithelial Lymphatic Glands. By K. H. Digby, B.S. Pp. 130. 8s. 6d.

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Organic Chemistry for Students of Medicine. By James Walker, F.R.S. 2nd ed. Pp. 332. 10s. 6d.

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Groundwork of Surgery (for first year students). By A. Cooke, M.B., B.Ch. Pp. 183. 7s. 6d.

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Symptoms of Visceral Disease: A Study of the Vegetative Nervous System in its Relationship to Clinical Medicine. By F. M. Pottenger, M.D. Pp. 328. 21s.
Geriatrics. By M. W. Thewlis, M.D. With Introductions by A. Jacobi, M.D., and I. L. Nascher, M.D. Pp. 250. 15s.
A Text-book of Urology. By V. C. Pedersen, M.D. Pp. 992. 36s.
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Cerebro-spinal Fluid in Health and Disease. By A. Levinson, M.D. With foreword by L. Bektoen, M.D. Pp 232. 18s.
The Venereal Problem. By E. T. Burke, M.B. Pp 208. 7s. 6d.
Psychiatric-Neurologic Examination Methods. By Dr. A. Wimmer. Authorised Translation by A. W. Hoisholt, M.D. Pp. 177. 10s. 6d.

LAURIE, T. WERNER, London.
Efficiency Ideals: A Short Study of the Principles of "Scientific Management." By Thiselton Mark, D.Lit., B.Sc. 2s. 6d.
Letters to a Young Man on Love and Health. By Walter M. Gallichan. 4s. 6d.

LIVINGSTONE, E. S., Edinburgh.
Handbook of Skin Diseases By F. Gardiner, M.D. Pp. 160. 6s.
Manual of Diseases of Children. By J. Burnet, M.D. 2nd ed. Pp. 416. 8s. 6d.
Handbook of Anæsthetics. By J. Stuart Ross, M.B., and others. Pp. 214. 7s. 6d.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., London.
Cuba: The Land of Opportunity. By G. C. Musgrove. Pp. 103. 1s.

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PUBLIC HEALTH AND HOSPITAL WORK IN INDIA IN 1918.

(*Concluded from p. 906*)

The Punjab.

AN immense amount of work was done in the dispensaries in the Punjab, where 4,957,555 patients were treated, of whom 88,386 were in-patients. There was less fever than in the previous year, but under the heading of "other infective diseases" there was an increase from 9360 cases in 1917 to 215,284, chiefly due to a virulent outbreak of influenza in October and November. Colonel R. C. Macwatt, I.M.S., Inspector-General of Civil Hospitals, states that "the figures furnish no index of the magnitude of the epidemic, which accounted for at least three-quarters of a million deaths." 15,845 cases of pneumonia were treated, of whom 2357 were in-patients, 599 of these latter being fatal. Fortunately there was considerably less malaria (611,523 cases compared with 1,006,866 cases in 1917), and "had it not been for the wave of influenza, the health of the province would have been unusually good." It is worthy of note that Assistant Surgeon Rai Sahib Mathra Das, of Moga dispensary in Ferozepore district, performed 7217 "selected operations" (an average of 20 every day throughout the year); 4391 were for cataract.

North-West Frontier Province.

In the North-West Frontier Province the births fell from 32·1 per 1000 in 1917 to 30·6 in 1918, the lowest ratio recorded during the past five years, and lower than in any other province in India; in Bannu district the ratio was only 25·5. As, however, more male births were registered than female, Major H. Crossle, I.M.S., chief medical officer, considers that the apparent decrease is due in part to inaccurate registration. The death-rate of 70·3 per 1000 is to be compared with 29·48 in 1916, and 24·15 for the quinquennium, 1911–1915. Of the total 143,506 deaths, 105,632 occurred in the last three months of the year, chiefly from influenza, the deaths from this cause numbering 93,831. There were two outbreaks in July and August, the second being the more severe. Energetic measures were taken. Temporary dispensaries were opened, the entire vaccination staff were provided with medicines, gargles, &c., and employed on itinerating duties in their districts, the vaccinating work being temporarily suspended. Schoolmasters were also of great service in distributing medicines. Segregation, where it can be carried out, is a sure safeguard. The inhabitants of the village of Samsai, in the Khyber Agency, prohibited all intercourse with their neighbours, and so escaped, although influenza prevailed in the surrounding villages.

In the jails of this province the health was, on the whole, good, except for influenza. The admissions to hospital were at the rate of 1077 per 1000, the daily sick 34, and the deaths 55·75 per 1000. There were 698 cases of influenza, with 63 deaths, exactly half the total number of deaths from all causes.

Central Provinces and Berar.

In the Central Provinces and Berar the jail population suffered severely from influenza; 1574 out of the 2810 total admissions to hospital, and 121 out of the 186 total deaths were due to this disease. The total admissions were in a ratio of 749·2, and the total deaths 49·46, per 1000. Lieutenant-Colonel C. H. Bensley, I.M.S., Inspector-General of Prisons, has taken great interest in the future welfare of the prisoners under his charge and in helping them to obtain employment after their release. Little can be done in the way of teaching them trades, as most of them belong to the agricultural classes, but he proposes to introduce the weaving industry, and would like to teach new and up-to-date methods of agriculture. The report on the lunatic asylum for the Central Provinces, under charge of Lieutenant-Colonel A. Buchanan, I.M.S., at Nagpur, for 1918, shows on the whole a satisfactory condition in the health of its inmates; the mortality ratio was 8·50 per 1000, being lower than the average for the preceding six years (9·39), and lower than the corresponding average in any of the other eight Indian asylums. The daily average number of inmates was 377. Of the 32 deaths that occurred, 9 were from tuberculous disease. Special wards have been opened for such cases, and it is hoped that the mortality from this cause will be markedly lessened. Colonel C. R. M. Green, I.M.S., the Inspector-General of Civil Hospitals, Central Provinces, refers to the fallacious conclusions that may be drawn from comparisons of mortality in different asylums in any one year, and states that "a better basis for comparison is the average mortality for a number of years, because if the mortality is very high in one year it follows that there are less of the weakly left to die in the succeeding years." Everyone will agree that comparisons of figures for any one year may be fallacious, and that the average for a number of years should be taken in preference (for most purposes); but although "there are less of the weakly left to die" at the end of any one year, there may be numerous admissions of patients, weakly or the reverse. The population of the asylum is probably variable in regard to this factor; the reason for taking a series of years as a basis of comparison is in order that all conditions that are variable may be, as nearly as possible, averaged. The Nagpur district was severely affected by influenza; in the asylum the course of the epidemic was remarkable. As in other places, there were two phases: first, there were 47 attacks (all among the 298 male inmates), of which 38 occurred on August 6th and 7th, the fever being distinctly of the three-day type; there were no deaths. In the second phase, from Sept. 30th to Nov. 19th, there were 61 attacks, all among the staff and their families, with 3 deaths; none of the female inmates (78) were attacked either time.

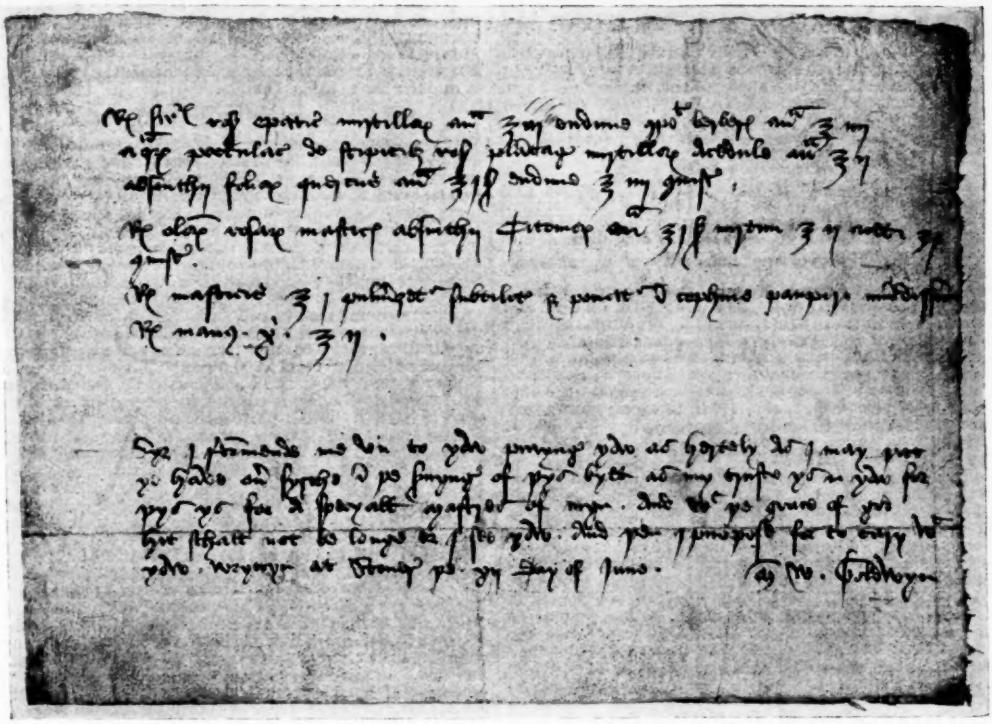
Burma.

In the province of Burma the birth-rate in 1918 was 33·01 per 1000, as compared with 36·25 in 1917; some of this decrease is considered to have been due to interference with registration, owing to the widely prevailing sickness and bereavement. The increase in the death-rate was very marked, this being 39·59, as compared with 25·28, the average for the previous five years; of the total deaths registered, 388,906, the actual increase over the quinquennial average was 139,938, "this enormous excess" being mostly due to the influenza epidemic, commencing in July and lasting until December. The small district of Kyaukse in Upper Burma had a death-rate of 61·74, in Mandalay district the ratio was 57·75, and in Rangoon 52·54 per 1000; this high mortality was almost all due to influenza. The disease "was undoubtedly brought to Rangoon by details of troops returning from leave, or on transfer from India, and such details probably carried it quickly to cantonments in distant parts of Burma"; religious festivals and fairs with their large assemblages and subsequent dissemination of infection had a wide-spread influence. "In all towns and districts, as in Rangoon, the epidemic took on a mild form, and mortality was low for the first few weeks, until a violent and fatal phase was assumed with suddenness." This points to what has been called a progressively increasing power of infection. The economic effects were "very disastrous and far-reaching; whole village populations suffered simultaneously, and many were decimated." The real mortality cannot be exactly computed, but Lieutenant-Colonel C. E. Williams, I.M.S., the Sanitary Commissioner, considers that a rate of 14·10 per 1000 "may be accepted as approximately the influenza death-rate in registered areas in Burma," while, allowing for the heavy mortality in unregistered areas, the total deaths from influenza and its complications were not less than 200,000 during 1918. The case mortality was low in the jails, the highest ratio being 4·1 per cent. at Mandalay Central jail. The case mortality at two hospitals in Rangoon was 21·33 and 33·3 per cent. respectively; in the latter instance (339 cases with 113 deaths) the patients were low-caste Indians, labourers, and immigrants, often physically exhausted and underfed. The effect of quinine prophylaxis is indicated by a return furnished by Lieutenant-Colonel C. A. Stone, R.A.M.C.: of 256 men taking 7½ gr. daily, 9·8 per cent. were attacked; of 265 men taking 15 gr. twice weekly, 6·8 per cent.; and of 273 taking no quinine, 18·68 per cent. were attacked; while of 75 malaria cases under continuous treatment before the introduction of influenza 5·3 per cent. only contracted the disease.

In the report on hospitals and dispensaries in Burma Colonel P. C. H. Strickland, I.M.S., Inspector-General of Civil Hospitals, states with regard to 199 small-pox cases treated at the Rangoon Contagious Diseases Hospital, that out of 112 vaccinated cases 78 had modified, one discrete, and 33 confluent small-pox (12 being fatal); of 81 non-vaccinated adults 22 had modified and 59 confluent (25 being fatal); of 6 unvaccinated children 5 had modified and 1 confluent, and all recovered. The percentage of deaths among the vaccinated was 10·71, among the unvaccinated 28·73.

A FIFTEENTH-CENTURY PRESCRIPTION.

THE Stonor Letters and Papers, which have been edited by Mr. C. L. Kingsford from the originals at the Public Record Office, and which will shortly be published by the Royal Historical Society, include two letters (reproduced here by the courtesy of the Society) from William Goldwyn, who was a physician of repute in the reign of Edward IV. In one of them he sends four prescriptions to be made up by John Byrell, an apothecary of



Bucklersbury, it would seem for the wife of Sir William Stonor, of Stonor in Oxfordshire. The document is of peculiar interest, as probably a unique instance of a prescription written by a physician for a specific patient and sent to be made up by the apothecary. In the letter written a few days later, Goldwyn asks Lady Stonor to send him a buck for the marriage of a special friend of his, and in a postscript asks her to speak to her husband for the £16 which were due to him, no doubt as his fee for attendance.

The prescriptions were most probably intended for the second Lady Stonor, and the year will then be 1480. In printing the prescriptions it has seemed best to mark the expansions by the use of italic letters; "ana" represents the Greek ἀνά (to the amount of), which is still used in modern prescriptions in the form āā; "epatice" is either the common liverwort or the hepatica; "olorum" is presumably an error for "oleorum"; "cicomorum" means wild figs; "manus Christi" is apparently a drug, but does not seem to be identifiable; "acedule" is also obscure. "℞," of course, is our present form for "Recipe."

William Goldwyn, in his will dated June 2nd, 1482 (P.C.C., 5 Logge), describes himself as "maister of art and Bacheller of fesyk"; he directed that he should be buried in the Chapel of the Hospital of St. Thomas Acon, to which he bequeathed all his "books of fesyk to be chayned in the common Library for evermore." John Berell, "apotecary," was one of his executors. The will was proved on June 8th, 1482. John Berell, grocer, occurs in 1473 and 1487, and John Berell, junior, apothecary, in 1472.

[*The Prescriptions.*]

℞. Sir*roporum* ros*arum*, epatic*e*, mirtillor*um*, an^{a} ℥iij. endiuie, compot. berberis, an^{a} ℥iiij. aq*uarum* pocculat*arum* de stipiti*bus* ros*arum*, plan*taginis*, mirtillor*um*, acedule, an^{a} ℥ij. absinthii, folior*um* quercus, an^{a} ℥jss. endiuie ℥iiij. commisc*eantur*.

℞. olor*um* ros*arum*, mastic*is*, absinthii, Cicomor*um*, an^{a} ℥j. mirtini ℥. aceti ℥j. commisc*eantur*.

℞. masticis ℥j. puluer*izetur* subtilit*er* et ponat*ur* in cophino paupiri mundissimi.

℞. manus chr*isti* ℥ij.

[*The Letter.*]

Syr, I recommende me unto yow, prayng yow as hertely as I may that ye have over sygthe in the servyng of thys byll, as my truste ys in yow: for thys ys for a specyall Mastres of myn. And with the grace of God hit schall not be longe or I see yow. And then I purpose for to tary with yow. Wrytyn at Stoner the xij day of June.

Mr. W. Goldwyn.

To John Bvrell the eldur, Poticary, Duellyng in Bucklers Bury, be thys byll delyverde.

THE STATE IN RELATION TO CHRONIC DISEASE.

UNDER this title a Chadwick Public Lecture was delivered on Thursday, Nov. 13th, at 5.15 P.M., at the rooms of the Medical Society of London, Chandos-street, W., by Dr. R. O. Moon. After remarking on the general improvement of public health during the past 50 years, largely as the result of Chadwick's labours, the lecturer uttered a warning against the dangers of the specialism which isolates departments of knowledge. Political economy and medicine should be regarded as parts of sociology. In the opinion of the lecturer, too static a view is taken of chronic diseases. They overlap and flow into one another and their apparent definiteness, fostered by nomenclature, is fallacious. While science analyses, the State should integrate. "The first duty of the State, in connexion with disease," he said, "is prevention." This duty was well recognised by the Royal Army Medical Corps in the war, though many activities were hampered by inelastic regulations. The primary duties of the State with regard to prevention are: (*a*) to secure a pure water-supply; (*b*) to supply unadulterated food and good milk; (*c*) removal of dust and smoke; (*d*) house and town planning; (*e*) restriction of the consumption of alcohol.

Proceeding, Dr. Moon said the chronic diseases at present dealt with by the State were insanity and tuberculosis. There was a great need for hospitals or special houses for borderland cases. The exaggerated idea of the infectivity of "consumption," which possessed the public mind, had to be combated. Post-sanatorium treatment for the tuberculous should be amply provided. He dwelt on the importance of civic efficiency to the nation and pointed out ways of dealing with inefficiency resulting from circulatory disorders and epilepsy. Similar work to that which was being done by employment bureaus for disabled soldiers should be applied to all citizens suffering from chronic disease. Doctors recommended "light work," but there was difficulty in defining it, and medical men should become familiar with the amount of work involved in various forms of industrial and agricultural occupations.

In conclusion, the lecturer pleaded for closer coöperation between Pensions Committees, Labour Exchanges, and the medical profession.

After the lecture Sir James Crichton-Browne presented the Chadwick gold medal and prize for excellence in municipal engineering and hygiene to Mr. P. S. J. Bovey, a matriculated student and prize-winner in the Engineering Section at University College. Mr. Bovey was introduced to the Chairman by Mr. Matthews, Chadwick Professor of Municipal Engineering in University College. A gold medal has been annually offered by the Chadwick Trustees for

competition by the engineering students of this college for twenty years, and only one year has there failed to be a winner.

The remaining lecture of the Chadwick autumn programme for this year, on "Causes of Infant Mortality," will be given by Dr. Joseph Cates, of St. Helens, at the Hampstead Town Hall, Haverstock-hill, on Thursday, Dec. 4th, at 8 P.M., Sir William J. Collins, Chairman of the Chadwick Trustees, presiding. Admission is free to all Chadwick Lectures.

A HANDBOOK FOR EX-OFFICERS.

A PAMPHLET by Captain H. H. C. Baird, D.S.O., has just been published (price 3*d*.) by the Imperial Ex-Services Association, 34, Grosvenor-place, London, S.W.1. Its object is to put ex-officers, widows, dependents, and nurses into touch with the many organisations, official and unofficial, from which benefits may be obtained. It is estimated that on the books of the Ministry of Pensions there are 33,000 officers, 9600 widows, 900 nurses, 9100 children of officers, and 5600 other dependents, and there can be no doubt that through ignorance of their rights many of these are not obtaining all the help to which they are entitled. The pamphlet, which consists of eight pages only, forms a concise index, with references, to other publications and associations from which full details may be obtained, and it will be found most useful by many besides those principally concerned.

CHILDREN'S COUNTRY HOLIDAYS.

IN memory of Miss Beatrice Chamberlain, who was a zealous worker for the Children's Country Holidays Fund, a fund is to be created for increasing from a fortnight to a month the country holidays of certain especially delicate children. Nearly £420 has been raised, partly through the Memorial Committee and partly from Miss Chamberlain's old school-fellows. Much of this has been received in very small amounts, and it is significant that in one school of which Miss Chamberlain was a manager, 2*s*. 10*d*. was raised by the pennies of the children. It is desired to close the fund at an early date, and those who have not yet sent in their subscriptions are asked to do so as soon as possible. These should be marked "Beatrice Chamberlain Memorial Fund," and can be sent to the chairman of the Children's Country Holidays Fund, 18, Buckingham-street, Strand, W.C.2.

PUBLIC HEALTH AT SHANGHAI IN 1918.

SHANGHAI lies in latitude 31° 15" N., and has an estimated population of 659,000 Chinese and 21,000 resident foreigners, chiefly Japanese, British, Portuguese, American, and German. The death-rate among Chinese in 1918 was 12·8 per 1000, the lowest ratio yet recorded except in 1906, when it was 12·3; among foreigners the ratio was 16·5, lower than in the preceding year (20·7), but higher than in 1915 and 1916 (15·4 and and 14·0 per 1000). There had been a recrudescence of small-pox in 1917, due to accumulation of non-immune material from outside Shanghai, which led to an increase in vaccination in 1918, the total operations numbering 26,315. Dr. Arthur Stanley, the health officer, remarks that "China is no place for the unvaccinated. Since the beginning of the war there had been an unusual influx of foreigners who had not taken the very necessary precaution of vaccination before they embarked from their homelands for China. Several severe cases among such arrivals were infected on the very day they landed." He recommends that vaccination be repeated every three years, as there is so much small-pox in the country. There has happily been no cholera since 1912. Typhoid fever caused 21 deaths among the non-Chinese, and antityphoid inoculation is recommended on first arrival, especially for young people. Cerebro-spinal fever appeared in Hong-kong in epidemic form at the beginning of the year; a careful watch was kept for the disease in Shanghai, but only 13 cases occurred, all sporadic. The pandemic prevalence of influenza reached Shanghai at the end of May, but subsided by the end of June; there were 152 deaths among Chinese and 3 among foreigners; again, from the last week in September to the middle of November there was prevalence, with 266 deaths among Chinese and 6 among foreigners. There was, as in 1917, a complete absence of plague and plague-infected rats, though in the north-west of China there were threatenings of epidemic prevalence; 16,181 rats were found dead, and examined, in Shanghai, with a negative result in every case. Tuberculosis caused 1237 deaths among the Chinese and 60 deaths among non-Chinese; it was hoped that the section of the isolation hospital available for foreign cases of this disease would be available early in the present year. Since the opening of the Pasteur Institute in 1899 662 cases have been treated, with a mortality of 8, or 1·21 per cent., among those who underwent complete treatment; in 1918 58 persons were treated, with 3 deaths; in each of these 3 cases the patient was not brought for treatment until some days had elapsed. Shanghai is well provided with isolation hospital accommodation, a new pavilion having been opened last year, with many improvements. With regard to the disposal of house refuse from the city there have been difficulties, especially due to the great increase in population; the refuse amounts to about 130,000 tons annually, used either as manure or for raising low land. Mosquito reduction is carried out systematically. There is abundant evidence in this report that sanitation at Shanghai is in extremely capable hands.

PUBLIC HEALTH AT HONG-KONG IN 1918.

A REPORT, signed by Mr. M. Fletcher, Colonial Secretary, on the Blue-book for 1918, states that the estimated total population at the middle of the year was 561,500, but this total includes the New Territories; and, as the birth and death figures do not include those from that area (with the exception of New Kowloon), the population for the purpose of calculating those rates is estimated at 548,000, of whom 13,500 are non-Chinese. The corrected birth-rate for the year was 4·4 per 1000 among the Chinese community and 22·1 per 1000 among the non-Chinese community, as compared with 6·9 and 20·8 in the year 1917. The death-rate for the year was 29·6 per 1000 among the Chinese community and 19·5 among the non-Chinese community, as compared with 23·7 and 14·00 for 1917. The number of deaths from malaria (398) showed a decrease on the previous year (416). The deaths from plague numbered 251, as compared with 35 in 1917. Small-pox deaths numbered 26, all Chinese. There were 3169 deaths from respiratory diseases, as compared with 2248 in 1917, and 51 of these were among the non-Chinese community. Pulmonary tuberculosis claimed 118 Chinese and 6 non-Chinese victims, whilst other forms of tuberculosis represent an additional 616 deaths, making a total of 740, or 5·4 per cent. of the total deaths among the community. Beri-beri was responsible for 804 deaths, as compared with 654 during 1917 and 517 in 1916. During the past few years circulars have been distributed to all the large employers of coolie labour calling their attention to the fact that beri-beri is produced by the consumption of white rice as the staple article of diet without a sufficiency of other foods, and advising that beans should be supplied with the rice when fresh meat or fresh fish cannot be afforded. In the early part of 1918 there occurred a severe epidemic of cerebro-spinal meningitis, which caused some 968 deaths. In consequence of this outbreak the Government of the Straits Settlements prohibited for some months the immigration of coolie labour from Hong-Kong into Singapore. In the Civil Hospital, which contains 150 beds in 19 wards, 3677 in-patients and 14,480 out-patients were treated during 1918. In the Tung Wa Hospital, for Chinese only, which contains 323 beds, 6562 patients were accommodated. The new Kwong Wa Hospital for Chinese in the Kowloon Peninsula received 2336 patients.

LETTERS FROM AN EIGHTEENTH CENTURY DOCTOR.

SOME letters dating from the eighteenth century have been purchased by "Sir Patrick Dun's Library" and are printed in full in their report to the Royal College of Physicians of Ireland. The writer of the letters was Sir Edward Barry, Bart., a famous physician who, after studying medicine at Leyden under the great Boerhaave, graduated there in 1719. He practised for a time in Cork and after a distinguished career in Ireland eventually became President of the King and Queen's College of Physicians and later a Fellow and a Censor of the College of Physicians of London, where his success, according to Dr. Johnson, was less pronounced. The three letters, dated 1737, and addressed to Barry's friend and patron, Lord Orrery, with incisive and not over-charitable wit, may fill in some gaps in contemporary medical history. A case of myositis ossificans is the chief novelty described.

NURSES AND WAR SERVICE PENSIONS.

THE Ministry of Pensions has issued a statement for the guidance of nurses entitled to compensation for injury or disease due to active service.

A nurse who has been discharged or demobilised from any of the services and is in receipt of retired pay (or gratuity in lieu of retired pay) for a disability due to or aggravated by war service is entitled to assistance from the Ministry of Pensions, and any nurse who is suffering from a disability which she believes to be due to or aggravated by war service is entitled to have her claim considered. In all cases communication should be made in writing to the Secretary, M.S.2 (Officers), Ministry of Pensions, 14, Great Smith-street, London, S.W.1.

Nurses are advised to obtain medical evidence of the present condition of their disability and, when possible, some evidence of its causation or aggravation by service where this has not been established. These documents should be forwarded with the application. Should advice be required merely on a question of retired pay or medical treatment the nurse is recommended to apply to the Officers' Friend, Ministry of Pensions, Westminster House, London, S.W.1.